THE

BOOK OF PLANT DESCRIPTIONS

OR

RECORD OF PLANT ANALYSES

WITH A

SYNOPSIS OF THE TERMS MOST FREQUENTLY USED IN THE DESCRIPTION OF PLANTS; AND A SCHEDULE OF WORK TO BE PERFORMED IN THE BOTANICAL LABORATORY; ALSO, A LIST OF SUBJECTS SUITABLE FOR THESES.

PREPARED FOR THE USE OF TEACHERS AND STUDENTS.

BY

GEO. G. GROFF, A. M., M. D.,

Professor of Physiology and Natural History in the University at Lewisburgh, Penn'a. Author of Chemical, Botanical, Mineral, Physiological, and Sanitary Charts; of the Manual of Accidents and Emergencies; Editor of Science and Health; Associate Editor of The Physician and Surgeon, etc., etc.

SIXTH EDITION, REVISED AND ENLARGED.

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Botany
Gpon

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"There is to me
A daintiness about these early flowers,
That touches me like poetry. They bloom
With such a simple loveliness among
The common herbs of pasture, and breathe out
Their lives so unobtrusively, like hearts
Whose breathings are too gentle for this world."

MILLER.

433
26/8/1890

PREFACE.

"The true object of Botany is not to learn the names of plants, and then to place them in any artificial system, but to detect hidden beauties; and in the eyes of the economist, to discover elements of value in root, stem, bark, flower, seed, or leaves. There is not a flower which blows but has some beauty only unveiled to the minute observer and enquirer, some peculiarity of structure fitting it to its place and purpose, and yet not patent to the casual glance."

There is perhaps no branch of science which more than Botany demands the application of the highest mental powers, in the investigation of many of the phenomena presented by plants; to him who truly prosecutes it, whether little or much, it brings in due measure, an immediate reward in his own improvement and delight.

"There breathes for those who understand
A voice from every flower and tree,
And in the work of Nature's hand
Lies Nature's best philosophy."

"Flower in the crannied wall,
I pluck you out of the crannies;
Hold you here, root and all, in my hand,
Little flower, but if I could understand
What you are, root and all, and all in all,
I should know what God and man is."

TENNYSON.

As a disciplinary study, when properly pursued, Botany stands unrivaled, its special value being in its power to develop and strengthen the perceptive powers of the mind. It is also one of the most practical studies; for *plants produce all animal food;* they produce our most valued medicines; our clothing and textile fabrics, and paper; all our fuels; our dyes, gums, vegetable acids, and oils, and many chemicals; the mild stimulants tea and coffee; plants are used in a thousand ways in the arts; and finally plants clothe the earth, protecting it from violent atmospheric changes, at the same time beautifying, enlivening, and cheering the landscape.

There is no study which so richly repays its votaries in real pleasures, as does Botany. Dr. Charles Short, Botanist and Naturalist of Lexington, Ky., a few years ago wrote: "The Study of Botany has been for many years the occupation of my leisure moments; it is a merited tribute to say, that it has lightened many a heavy and smoothed many a rugged hour; that beguiled by its charms, I have found no road rough or difficult, no journey tedious, no country desolate or barren. In solitude, never solitary; in a desert, never without employment; I have found it a relief from the languor of illness, the pressure of business, or from the unavoidable calamities of life."

To promote a *real* acquaintance with, and a love for plants, by assisting teachers and pupils, this little work has been prepared by the Author.

LEWISBURGH, PA., JAN. 2, 1882.

TO THE TEACHER.

It is the province of botanical studies to develop the perceptive powers of the mind, and not the memory; hence, botany should be studied from *plants*, not from *books*. In the early spring, before flowers and young wild plants are to be obtained, the Author thinks it most profitable for classes to study *seeds*, *stems*, *barks*, *buds*, etc., as indicated in the topics for laboratory work. This work can be done with a text-book, or without one. If a text-book is used, any subject, as of buds, is carefully studied, and then every member of the class is required to verify the statements of the book by actual observation. It is best, however, always to study any topic with material for illustration in hand. If a text-book is not used, the teacher should each day give a short lecture, and immediately afterward, the pupils should proceed with their laboratory work to demonstrate the truth of the lecture. This laboratory work may be done at the students' rooms, or at home, but it is best done in a general laboratory, specially fitted up for the purpose and under the eye of the teacher or of his assistant. Every student should be required to faithfully perform all designated work.

As soon as the spring flowers can be obtained in sufficient abundance to supply the whole class, the work of Analysis may commence. At first, this is done in the class. Each student is supplied with a perfect specimen (root, stem, leaves, and flowers,) of the same species; also with a blank schedule, such as is used in this book for recording the characters of plants. One student, following the order of the schedule, *from the plant in his hand*, reads off the characters of the root. Another gives the characters of the stem, another of the leaves, etc.; the body of the class meanwhile observe that all characters are given correctly. Nothing should be written in the classroom, but after the class exercise is over, the pupils may from memory, *with plant in hand, reproduce in ink* the description. In a few days or weeks, most students are able rapidly and accurately to perform these analyses. When this degree of proficiency is reached, the class may be permitted to give the whole recitation period to analyses in the laboratory or in their rooms.

In describing plants, students will find the syllabus of terms commonly used, of great value; but when no suitable botanical term can be found, use the best English word which expresses what is observed, or make a drawing of what is seen. Never allow students to record *guesses;* only what is actually observed should go down on paper. Descriptions should never be written entirely from memory, but always with the plant in hand.

Students should be required to write out in full at least fifty descriptions, and it amply pays to write one hundred; and as an evidence of work done, the book of descriptions should be presented to the teacher at the close of the term, for examination.

Following this plan, the whole plant is carefully studied and investigated before any thought is given as to its name; this is now to be found by means of the "key" in the text-book. If the class does not use a text-book, the teacher gives the com-

mon and scientific names of the plant to the class, after the analysis. If a plant has any points of interest, historical, medicinal, geographical, or otherwise, which may be of general interest to the class, they should now be given by the teacher. Inquire of the value, distribution, and general estimation in which the plant is held.

Teachers are strongly urged to require original theses or essays on botanical subjects, similar to those indicated in the list of subjects. The preparation of these essays will be of far more value to students, then the study of any mere text-book. It is also urged that students be required to dry and mount small herbaria. Nothing more attaches them to the study of botany than this work, and the herbaria grow yearly in value to the collectors.

Teachers should see that pupils have good light for the performance of all this work. Do not permit eyes to be ruined by poor light. Every student should be provided with a good pocket magnifying glass, and if possible, also have access to a good compound microscope.

These blanks can be used with equal success with the works of either Gray or Wood. The Author, with College Students, is accustomed to perform the work indicated on the second page of the cover in thirteen weeks, and he firmly believes that the plan here indicated will result, if fully carried out, in making students really acquainted with plants as living things, and not as dead objects to be merely analyzed and classified.

TO THE PUPIL.

In this study, it will depend upon yourself altogether, whether you are benefited or not. If you use your eyes, fingers, nose, and tongue constantly and in a common sense way, trying to investigate the useful and interesting properties of plants, you will learn much that is new and valuable, and greatly strengthen your mind. But if, on the contrary, you attempt to obtain a knowledge of plants from books, you will receive merited disappointment. Investigate everything. Take nothing for granted. Go out into the fields and woods, and see plants growing in their natural beauty, and you cannot but love these wondrous works of God. For all laboratory work, have a good, strong, light; be patient, be earnest, work slowly and aim well, *and you will succeed* beyond your most sanguine expectations.

Botanical Terms Most Frequently Used

IN THE

Description of Plants.

THE ROOT.

KINDS.

Simple Primary, a tap root.
Multiple Primary, with numerous roots from the seed.
Secondary, arising from unusual places on the stem.
Aerial, never reaching the earth.

SHAPES.

Conical, largest at top.—*Ex.*, *Carrot.*
Fusiform, largest in middle.—*Ex.*, *Radish.*
Napiform, turnip shaped.
Ramose, branched.
Fibrous, of fibers.
Tuberous, containing numerous tubers.
Fibro-tuberous, both fibrous and tuberous.
Moniliform, like a necklace.

THE STEM.

CLASSES.

Exogenous—outside grower; has bark, pith and wood, leaves netted-veined, dicotyledonous, flowers 4–5 parted, root axial.—*Ex.*, *Peach.*
Endogenous—inside grower; no bark, pith and wood intermingled, leaves parallel veined, monocotyledonous, flowers three parted, root multiple.—*Ex.*, *Lily.*
Acrogenous—summit grower, flowerless.—*Ex.*, *Ferns*, *horsetails.*

KINDS.

Caulis, the ordinary herbaceous stem.
Culm, a grass stem.
Scape, a flower stem.
Frond, a fern stem.
Trunk, large and woody, tree stem.
Vine, a climbing stem.
Creeper, a stem which creeps or runs on the ground.
Rhizoma (or root-stock), an irregular, underground stem.
Tuber, an underground stem shaped like a potato.
Corm, a solid, rounded or oval, underground stem.
Bulb, a scaly corm.
Stock, the very short stem of the violet, turnip, etc.
Acaulescent, without a visible stem.

SURFACES.

1. *No hairs.*

Smooth, *knotted*, *warty.*
Glabrous, smooth and shining.
Glaucous, covered with a bloom.
Scabrous, scaly.
Punctate, with transparent dots.
Dotted, with dark, or resinous dots.
Maculate, with spots or blotches.
Glandular, having glands.

2. *Soft Hairs.*

Silky, *wooly*, *velvety*, *hoary.*
Pubescent, downy, with short, dense, soft hairs.
Villose, hairs long and soft.
Tomentous, hairs matted like felt.
Hirsute, pubescent with coarse or stiff hairs.

3. *Stiff hairs.*

Prickly, *stinging*, *spiny.*
Hispid, covered with stiff hairs.
Muricate, rough with hard points.
Strigose, hairs, stiff, sharp, and closely appressed.

CHARACTERS.

Herbaceous, the succulent vegetable stem, which lives but a single year.
Suffrutescent, slightly woody at the base.—*Ex.*, *Dock.*

Suffruticose, somewhat shrubby.—*Ex., Garden Sage.*
Fruticose, shrubby.—*Ex., Currant.*
Arborescent, shrubs or small trees, 15 to 20 ft. high.
Arboreous, when having true trunks.

DIRECTIONS.

Repent (or creeping) lying flat on the ground and rooting at joints.
Procumbent (or trailing) lying flat on the ground.
Decumbent (or prostrate) trailing, but with the apex ascending.
Ascending (or Assurgent), rising obliquely.
Scandent, climbing by tendrils.
Voluble, twining, as *hop vine.*
Declinate, with the top nodding or bending downward.
Diffuse, loosely spread in all directions, as a bunch of clover.
Erect.

DURATION.

Annual, enduring but one year.
Biennial, enduring two years.
Perennial, enduring from year to year.
Bi-perennial, the rhizoma living through two seasons, but reproducing itself indefinitely, as the potato.

BRANCHES.

1. *Arrangement.*
Alternate, opposite, whorled, forked.
2. *Forms.*
Sucker, a stem arising from a subterranean stem.
Offset, a short stolon.
Stolon, a declined branch, striking root at its tip.
Runner, a very slender stolon.—*Ex., the strawberry.*
Turion, a scaly sucker.
Tendril, spine, thorn, flower.

BUDS.

Terminal, lateral, accessory, adventitious, naked, latent, leaf, flower.

JUICES.

Watery, acid, sweet, milky, acrid, nauseous, aromatic, oily, pungent, garlicky.

THE LEAVES.

ARRANGEMENT.

Alternate, opposite, whorled, spiral, scattered, one-ranked, two-ranked, etc.
Radical, springing from the root.
Rosulate, forming a rosette.—*Ex., dandelion.*
Fasciculate, clustered.—*Ex., pine.*
Sessile, without a petiole.

VENATION.

Reticulated, netted veined, *i. e.*, the small veinlets complexly interlaced. The varieties are
Pinni-nerved, the larger veins running from the midrib as the vanes of a feather.
Palmi-nerved, larger veins radiating from base of leaf.
Forked, as in ferns.
Parallel veined, veins running parallel to the mid-rib, varieties are
Basal-nerved, the veins all arising from base of leaf.
Costal-nerved, veins arising from the mid-rib.
Recti-nerved, veins straight.
Curvi-nerved, veins curved.
Flabelli-nerved, veins spread out fan-shaped.

FORMS OF LEAVES.

1. *Long and narrow.*
Filiform, threadlike.—*Ex., asparagus.*
Linear, long and narrow like grass.
Subulate, scale-like.—*Ex., arbor vitæ.*
Ensiform, sword-shaped.—*Ex., flags.*
Acerose, needle-shaped.—*Ex., pines.*
2. *Broadest at Base.*
Deltoid, like Greek letter Delta (Δ).
Ovate, with outline of an egg.
Lanceolate, lance-shaped.
Cordate, heart-shaped.
Reniform, kidney-shaped.
Hastate, halberd shaped.
Sagittate, arrow-shaped.

3. *Broadest at Middle.*

Orbicular, roundish, or circular.
Peltate, shield-shaped.
Elliptical, with the outline of an ellipse.
Oblong, narrowly oval, with the sides somewhat parallel.

4. *Broadest at Apex.*

Obovate, inversely ovate.
Oblanceolate, inversely lanceolate.
Obcordate, inversely cordate.
Spatulate, narrower than oblanceolate.
Cuneate, wedge-shaped.

5. *Intermediate Forms.*

Lance-linear, lance-oblong, ovate-lanceolate, roundish, somewhat ovate, angled, subcordate, inequilateral, lyrate, multifid, pinnatifid.

NOTE.—In giving shapes of leaves, use any terms which may be most accurate.

BASE OF LEAVES.

Auriculate, with rounded lobes.
Sagittate, lobes pointed and turned back.
Hastate, lobes acute and turned outward.
Cordate, heart-shaped.
Amplexicaul, clasping the stem.
Perfoliate, the stem passing through the base of the leaf.
Connate, two opposite leaves cohering at their bases.
Decurrent, when the leaf margins run down the stem.
Oblique, roundish, tapering, lobed.

APEX OF LEAVES.

Acuminate, with a long tapering point.
Acute, with an acute angle.
Obtuse, with an obtuse angle.
Truncate, cut square off.
Retuse, rounded and slightly indented.
Emarginate, the end notched.
Obcordate, inversely heart-shaped.
Bifid, two cleft at apex.
Cuspidate, with a sharp slender point.
Mucronate, with a weak point.
Aristate, bristle pointed.
Cirrhous, ending with a tendril.

LEAF MARGINS.

1. *Entire.*

Ciliate, with minute hairs.
Revolute, the edges turned over.
Veined, with a vein running along the margin.

2. *Toothed.*

Serrate, teeth pointing forward.
Serrulate, minutely serrate.
Dentate, teeth pointing outward.
Denticulate, with small teeth.
Crenate, (scalloped) with rounded teeth.
Repand, wavy.
Sinuate, strongly wavy.
Incised, cut by sharp and irregular incisions.
Laciniate, cut into narrow segments.
Pinnatisect, cut into many narrow branching segments.
Multifid, much cut up.
Runcinate, pinnately cut with the segments pointing backwards.
Pectinate, cut as if with comb teeth.

3. *Lobed, etc.*

(NOTE.—Lobation may be either *pinnately* or *palmately*).

Lobed, the divisions rounded.
Cleft, the divisions sharply defined.
Parted, the incisions extending nearly to the mid-rib.
Divided, the incisions extending to the mid-rib.

SURFACES OF LEAVES.

(See Stem.)

TEXTURE.

Normal, fleshy or succulent, dry or scarious, leathery, membranous, papery, waxy.
Rugose, wrinkled.
Crispate, crispy or curled.

COLOR.

1. *Cyanic.* (Colors not yellow.)

Blue, bluish, brown, crimson, flesh color, lilac, livid, purple, pink, red, rosy, scarlet, violet, etc.

2. *Xanthic.* (Colors yellow.)

Citron, copper, cream, golden, orange, straw, sulphur, yellow, etc.

3. *Neutral.*

Black, chestnut, ashy, ferruginous, fiery, green, olive, spotted, striped, tawny, variegated, white, mottled, tinted, etc.

DURATION.

Fugacious, falling off very soon.
Deciduous, falling at the normal time.
Persistent, remaining during the winter, but not evergreen.
Evergreen, retaining the green color during the winter.

VERNATION.

Open or straight, unfolded in the bud.
Inflexed (reclined), the apex folded down to the base.
Conduplicate, the two halves folded, face to face.
Plicate, folded as a fan.
Circinate, rolled up from the apex or top.—*Ex., fern.*
Convolute, all rolled up from one edge.
Involute, rolled in from both sides.
Revolute, rolled outward from both sides.
Corrugate, crumpled in the bud.
Equitant, astraddle, each leaf conduplicate and overriding another.—*Ex., flags.*
Obvolute, half equitant.
Triquetrous, equitant, and the bud three-angled.—*Ex., sedges.*

COMPOUND LEAVES.

1. *Pinnately Compound.*

Interruptedly pinnate, the leaflets alternately large and small.—*Ex., potato.*
Abruptly pinnate, terminating with no end leaflet.
Odd pinnate, terminating with a single leaflet.
Pinnate with a tendril, terminating in a tendril.
Bi-pinnate, twice pinnate.
Tri-pinnate, thrice pinnate.
Decompound, still more divided than in tri-pinnate.

2. *Palmately compound.*

Palmi-3-foliate, with three leaflets.
Palmi-5-foliate, with five leaflets.
Palmi-7-foliate, etc.

PETIOLES.

Rounded, compressed, winged, sheathing, decurrent, grooved, striated, clasping, sheathing, coiling, tubular, split.

STIPULES.

Membranous, dry, spiny, setaceous, fugacious, tendril-like.
Exstipulate, without stipules.
Foliaceous, leaf-like.
Adnate, grown together.
Ochreate, sheath-like, enclosing the stem.
Ligule, the stipule in grasses.

INFLORESCENCE.

1. *Solitary.*

NOTE.—Here there is but a single flower, or solitary flowers at intervals over the stem.

2. *Indeterminate*, (also axillary, centripetal or ascending.)

NOTE.—In this mode, the flowering commences at the base of the stem, and may continue indefinitely.

Spike, flowers sessile along a single axis.
Spadix, same as spike, but the axis is fleshy, and surrounded by a *spadix*.
Catkin, a drooping spike.—*Ex., Willows and Poplars.*
Raceme, a spike, but the flowers not sessile.
Panicle, a branched, or compound raceme.
Thyrse, a compact panicle.
Corymb, a raceme in which the flower pedicles all arise to the same level.
Umbel, a raceme in which the flower pedicles start from the same point, and arise to the same level.
Head, a compact umbel.—*Ex., Clover, Buttonwood.*

3. *Determinate*, (also Terminal, Centrifugal and Descending. Here the flowering commences at the end of the stem, and descends.)

Cyme, a cluster resembling a corymb, but flowering first at the centre.
Fascicle, a branched cyme.
Glomerule, a capitate cyme.
Verticillaster, pairs of cymes arrayed in whorls.
Scorpioid, a circinate cyme.

4. *Mixed and Compound.*

NOTE.—There are cases in which the inflorescence seems to be both Determinate and Indeterminate; as in *garden sage*, each cluster is Determinate, but the clusters follow on the stem in an Indeterminate manner.

REGULARITY.

Regular, the parts of flower of same shape and size.

Irregular, reverse of regular.

SYMMETRY.

Symmetrical, having the same number of parts in *each circle*, as sepals, petals, stamens, or pistils.

PERFECTNESS.

Perfect, having both stamens and pistils.

Staminate (sterile), having only stamens.

Pistillate (fertile), having only pistils.

Neutral, having neither stamens or pistils.

Monœcious, stamens and pistils in different flowers, but same plant.

Diœcious, staminate and pistillate flowers on different plants.

Polygamous, same as diœcious, but with scattered perfect flowers.

Homogamous, florets all of one sex.

Heterogamous, florets not all of one sex.

COMPLETENESS.

Complete, having all the parts of a flower.

Apetalous, without corolla.

Naked, without calyx or corolla.

BRACTS.

Crowded, scattered, near, remote, erect, spreading, reflexed, foliaceous, petaloid, scales.

Involucre, a whorl of bracts under a flower.

Spathe, a large bract usually surrounding a spadix.

Chaff (pales), chaffy bracts on the receptacles of compositæ and grasses.

PEDUNCLE.

Long, short, straight, curved, thick, slender, nodding, drooping, erect.

Rachis, the common axis of inflorescence.

RECEPTACLE OR TORUS.

Naked, smooth, flat, concave, honey-combed, chaffy, bristly, minute.

THE CALYX.

Colors, green, foliaceous, tinted, petaloid.

Shapes, entire, toothed, lobed, parted, divided, cylindrical, cup-shaped, bell-shaped, urn-shaped, stellate.

COHESION.

Gamosepalous (or monosepalous), sepals all united into one piece.

Polysepalous, sepals distinct.

RELATIONS.

Closed, not opened.

Erect, spreading, reflexed.

INSERTION.

Hypogynous (or inferior), under the ovary.

Perigynous (or half-inferior), around the ovary.

Epigynous (or superior), above the ovary.

SHAPES OF SEPALS.

(See shapes of leaves.)

ÆSTIVATION.

Valvate, sepals meet edge to edge, not overlapping.

Induplicate, valvate, but edges of sepals rolled inward.

Reduplicate, valvate, but edges rolled outward.

Convolute, each sepal covering all within it.

Imbricated, overlapping as do shingles.

Plaited, folded as a fan.

Supervolute, plaited and then twisted into a spiral form.

Crumpled.—Ex., poppy.

DURATION OF SEPALS.

Caducous, falling off before the flower fully expands.—*Ex., poppy.*

Fugacious (or ephemeral), lasting but a day.

Deciduous, falling at the normal time.

Persistent, not falling, but neither growing or withering.

Marcescent, withering and falling after an indefinite time.

Accrescent, growing with the fruit.—*Ex., apple.*

IN THE DESCRIPTION OF PLANTS.

THE COROLLA.

COHESION.

Gamopetalous (monopetalous), the petals all more or less united.

Polypetalous, petals all distinct.

INSERTION. (See calyx).

SHAPES OF PETALS. (See leaves).

DURATION. (See calyx).

ÆSTIVATION.

COLORS. (See leaves.)

SHAPES.

1. *Gamopetalous* (or monopetalous).

Rotate, wheel-shaped.

Campanulate, bell-shaped.

Urseolate, urn-shaped.

Funnel, tubular, hooded.

Salver-form, like a small dish.—*Ex., phlox.*

Ligulate, strap-shaped.—*Ex., florets of compositæ.*

Labiate, with a lip.

Bi-labiate, with two lips.

Personate, labiate, but with the throat closed.

Ringent, labiate, but with the throat wide open.

Galeate, tri-labiate and upper lip arched.

Spurred, produced backward into a hollow spur.—*Ex., columbine.*

Saccate, spur very blunt and sack-like.—*Ex., violet.*

Inflated, bladder-like, as if full of air.

Anomalous, with irregular shape.

2. *Polypetalous.*

(*a*) *Regular.*

Rosaceous, shaped as rose.

Sub-rosaceous, somewhat rose-shaped.—*Ex., buttercup.*

Cruciform, cross-shaped.—*Ex. turnip.*

Caryophyllaceous, pink-like.

Liliaceous, lily-like.

(*b*) *Irregular.*

Papilionaceous, butterfly-shaped.

Violaceous, violet-shaped.

Orchidaceous, orchid-shaped.

Anomalous, irregular.

STAMENS.

COHESION.

Distinct, all separate.

Monodelphous, united into one group.

Diadelphous, united into two groups.

Polyadelphous, united into several groups.

Syngenecious, cohering by the anthers.

INSERTION.

Hypogenous, arising from under the ovary.

Perigynous, around the ovary.

Epigynous, on the ovary.

Epipetalous, on the petals around the ovary.

Gynandrous, stamens growing on ovary as in orchids.

LENGTH.

Equal, unequal, long, short.

Didynamous, two long and two short.

Tetradynamous, four long and two short.

Exserted, extending beyond the corolla.

Included, within the corolla.

POSITION.

Alternate, between the petals.

Opposite, opposite the petals.

Connivent, approaching each other.

Diffuse loosely spreading in the flower.

ANTHERS

ATTACHMENT.

Adnate, filament united the *whole length* of connective.

Innate, filament united to lower end of connective.

Versatile, filament united to middle of connective.

Pendulous, filament united to upper end of connective.

Sessile, anther with no filament.

SHAPE.

Oblong, short, cylindrical, conical, linear, sagittate, ovate, cordate, reniform.

DEHISCENCE.

Longitudinal, transverse, by valves, by pores.

ASPECT.

Extrorse, the body of the anther turned outward.

Introrse, turned inward.

POLLEN.

Note.—*Abundance, color, smoothness, stickiness,* and if possible, *forms* under the microscope.

BOTANICAL TERMS MOST FREQUENTLY USED

PISTILS.

LENGTH.

Long, short, exserted, included.

COHESION.

Distinct, when several entirely ununited.

Compound, several pistils or ovaries grown together.

STYLE.

Slender, thick, clavate, filiform, subulate, entire, terminal, lateral, basal.

STIGMA.

Shapes, globular, lobed, plumose, discoid, conical, cylindrical, linear, filiform, hooded, beaked, petaloid, stellate, radiate, fan-shaped, geniculate.

Position on style, terminal, lateral, sessile.

OVARY.

INSERTION.

Superior, above the calyx.

Inferior, under the calyx.

Half-inferior, the calyx growing amid the ovary.

SHAPES.

Entire, lobed, conical, ovoid, oblong, compressed.

Globular, lenticular, triquetrous, one-celled, two-celled.

PLACENTATION.

Free-central, the placenta standing unattached in the centre of the ovary.

Central, placentæ central, but united to the ovary walls.

Parietal, placentæ on walls of the ovary.

OVULE.

DIRECTION.

Erect, arising straight from base of ovary.

Ascending, arising obliquely.

Horizontal, horizontal from side of ovary.

Pendulous, hanging obliquely from near top of ovary.

Suspended, hanging from top of ovary.

KINDS OF OVULES.

Orthotropous, straight, not bent.

Campylotropous, a curved ovule.

Amphitropous, half inverted.

Anatropous, inverted.

FRUITS.

Simple, when resulting from a single flower.

Compound, when resulting from several flowers.

Fleshy fruits, simple succulent fruits as berries, pumpkins, apples.

Stone fruits, succulent fruits containing a stone.

Dry fruits, all those not succulent when ripe.

Dehiscent fruits, those which split open when ripe.

Indehiscent, those which do not split open.

Berry.—Ex., grape, cranberry, etc.

Pome.—Ex., apple, pear, quince, etc.

Pepo.—Ex., pumpkins, squashes, etc.

A. Dehiscent, 1 celled.

Follicle, a pod splitting open on one side only.

Legume, a pod splitting open on two sides.

Loment, a lobed pod.

B. Dehiscent, 2 or more cells.

Silique, a linear, 2-celled pod.

Silicle, a short, broad silique.

Pyxis, a round pod, opening by a lid.

Capsule, a dry pod, opening by valves.

C. Indehiscent Fruits, one-seeded.

Akene, coat free from seed.—*Ex.*, buttercup.

Utricle, coat a loose bladder.—*Ex.*, pigweed.

Grain, coat adhering to seed.—*Ex.*, wheat.

Nut, the coat thick.—*Ex.*, walnut,

Key (or Samara) the coat expanded into a membranous wing.

DEHISCENCE.

Septicidal, opening through the partitions.

Loculicidal, opening directly into the cells.

Septifragal, the valves breaking away from the partitions.

Valvular, opening by valves.

Porous, opening by small pores.

Circumscissile, opening transversely, as with a lid.

THE SEED.

THE PARTS OF.

Podosperm, the seed stalk.

Testa, the outer covering.

IN THE DESCRIPTION OF PLANTS.

Tegmen, the inner covering.
Nucleus, all within the envelopes.
Embryo, the young plant in the seed.
Albumen, the mealy part of the seed.
Hilum, the scar left on removing the stem.
Rhapha, the ridge connecting chalaza and hilum.
Chalaza, the place where albumen, embryo, and coats blend.
Micropile, the trace of the foramen of the ovule.
Radicle, the stem of the embryo.
Plumule, the bud between the cotyledons.
Cotyledons, the seed leaves.

TEXTURE OF ALBUMEN.

Oily, fleshy, starchy, mucilaginous.
Horny, as in coffee.
Ruminated, as if chewed.—*Ex.*, *nutmeg.*

POSITION OF THE EMBRYO.

Excentric, to one side.
Peripheric, curved around the albumen.
Accumbent, radicle bent and lying beside cotyledons.
Incumbent, radical resting against back of one cotyledon.
Conduplicate, incumbent, but cotyledons partly embracing radicle.

DIRECTION OF THE EMBRYO.

Ascending, when pointing to apex of pericarp
Descending, pointing to base of pericarp.
Centripetal, pointing to axis of pericarp.
Centrifugal, pointing to sides of pericarp.

HABITAT OF PLANT.

Terrestial, aquatic, parasitic, aerial, dry banks, swamps, old fields, sterile rocks, etc., etc.

LABORATORY WORK IN BOTANY.

In the prosecution of the laboratory work, the student is expected to take notes, and to make drawings, of all the subjects which he investigates. *Drawings are often of much more value than lengthy descriptions.* For this work, the student needs a good, sharp penknife, a pocket lens, several needles mounted in handles, some straight, others hooked at the point; good strong light, and much patience and perseverance. *This work should never be done at night or during twilight.*

The different topics can most profitably be taken up by the student in the order in which he studies them in his text-book; thus, the seed should be investigated after it is studied in the text. If no text-book is used in this portion of the work, a lecture from the teacher, stating to the pupil what is expected to be found, should precede each investigation. This work may wholly or only partially be completed before commencing the analysis of plants. If lack of time prevents the completion of all the topics, it is recommended a portion of them be omitted. The analysis of plants should commence with the earliest appearance of flowers in the Spring, but it is recommended that no analyses be recorded until the student becomes somewhat expert in the use of terms.

1. Examine and study six seeds. (See outline page 15).
2. Examine six buds; pick same to pieces and record observations. (See outline page 15).
3. Examine and draw eye of potato. } Compare the two.
   Study structure of the onion. }
4. Study the morphology and venation in 10 leaves; draw. (See page 15).
5. Study venation and vernation in 10 leaves; draw.
6. Study roots and rootlets of three plants, record observations, and draw root tips.
7. Study six transverse sections of shrubby stems.
8. Obtain and study thorns from two plants.
9. Examine prickles from two plants.
10. Plant seed of any common herb, and study its development for six weeks. Record observations.
11. Study æstivation in 6 flower buds.
12. Make L. and T. sections of six ovaries: draw.
13. Examine and draw six anthers.
14. Examine rhizomas of three plants.
15. Examine climbing apparatus in three plants.
16. Examine naked buds of two different plants.
17. Show by an experiment that plants exhale oxygen.
18. Study nectaries in three plants.
19. Observe action of insects in cross fertilization of one or more plants, and record observations.
20. Spiral arrangement of leaves in apple, cherry, etc.
21. Compare structure of fruits, as apple, orange, pear. (See page 15).
22. Compare structure of a grape and cranberry.
23. Record complete analyses of 60 plants.
24. Make an herbarium of 100 dried and mounted plants.

OUTLINES FOR LABORATORY WORK.

In all scientific investigations the student should proceed in a systematic manner. A few examples are given of the proper method of pursuing botanical laboratory work. In all cases the student will follow a similar analysis, which in time he should prepare for himself.

SEEDS.

(Use the *lima bean, pumpkin, acorn, horse chestnut, chestnut, peanut, apple seed,* or other *large seed,* for this work. Prepare the seed by soaking in water for a day.)

1. Shape (draw it).
2. Size.
3. Color.
4. Surfaces. { General surface. / Hilum. / Micropile.
5. Coats. { Number. / Thickness. / Remarks.
6. Embryo. { Position. / Direction. / Cotyledons. / Plumule. / Radicle.
7. Albumen.
8. Remarks.

BUDS.

1. Position on Stem.
2. Shape (draw it).
3. Size.
4. Color.
5. Protective Elements. { Scales (Shapes of, No. of layers, etc). / Hairs. / Varnish.
6. Internal arrangement.
7. Remarks.

A FRUIT.

1. The kind or class.
2. The Pericarp (nature of).
3. Shape.
4. Size (circumference and diameter).
5. Color.
6. Surfaces. { General surface. / The two ends. / Imperfections.
7. The Stem.
8. Make and draw transverse section.
9. Make and draw longitudinal section.
10. Structure of Exocarp.
11. Structure of Mesocarp.
12. Structure of Endocarp.

A LEAF.

1. Shape (draw it).
2. Size and color, texture.
3. Surfaces. { Upper. / Lower.
4. Shape of margin, apex, base.
5. Venation (draw).
6. Petiole.
7. Study microscopic structure (if microscope is accessible).

SUBJECTS SUITABLE FOR THESES.*

1. The influence of warmth and moisture on germination.
2. Different means of distribution of seeds.
3. The different forms of leaves.
4. The morphology of stamens.
5. A study of pistils.
6. A study of the morphology of fleshy fruits.
7. Epidermal appendages.
8. Vegetable acids.
9. Relation of color to odor in flowers.
10. Insects in relation to fertilization.
11. Why are aquatic leaves much dissected or linear?
12. The fruits of the rose family.
13. Effects of fertilizers on plant growth.
14. Animals parasitic on plants.
15. A study of parasitic plants.
16. The rate of plant growth.
17. A study of buds, the coverings of.
18. A study of some rhizomas.
19. A study of climbing apparatuses.
20. A study of starches.
21. Some pollen grains.
22. Characters of different woods.
23. Local floras, why they differ.
24. A study of plant sleep.
25. Plant movements, why and how performed.
26. A study of insectivorous plants.
27. Changes in color of leaves.
28. Curious modes of distributing seeds.
29. The yeast plant, Torula.
30. The green plant, Protococcus.
31. The habits of Ferns.
32. A plant's neighbors.
33. Effects of cultivation on plants.
34. Influence of light on growing plants.
35. A study of the fruits of the strawberry, raspberry and blackberry.
36. Is there any definite proportion of active to dormant buds in any year?
37. Is there any agreement in growth as to the length of branch and size of the annalar ring in each year?
38. Is there any certain number of leaves on a year's growth, or any definite proportion between the length of the internodes?

* The topics following No. 32 are given by Prof. Beal, of the Michigan Agricultural College, in his paper "The New Botany."

39. Is there any similarity of rapid or slow growth of all the limbs on a branch in each year?
40. Can the smallest, old, dormant buds be made to grow?
41. Is there any order as to what buds grow and what remain dormant?
42. Is there any order in the arrangement of the specks on a branch?
43. Do the specks change as the branch grows older? If so, in what way?
44. How many leaves each year are required to build up a branch?
45. How great is the extent of leaf surface exposed for each branch?
46. Does the amount of growth in any year correspond to the number of leaves on the twigs and main axis?
47. Does the ring of wood depend on the growth of the main axis?
48. Compare the leaves of "the butternut and the black walnut," "the hickory and the shellbark," "the sugar maple and the red maple," "the black spruce with the Norway spruce," etc. The arrangement of the parts of the flower in reference to self or insect fertilization, in *moth mullein, dogbane, sage, thyme, red clover, plantain, milkweed, mallow, thistle, violet, campanula, iris, lobelia, martynia, Indian corn, wild balsam.*
49. The germination powers of weevil eaten pease.
50. For what do ants visit plants?
51. What attracts the blowfly to the carrion plant?

SIGNS COMMONLY USED IN BOTANY.

⊙ Monocarpic.	° or f. Foot.
① Annual.	′ Inch.
② Biennial.	″ Line, $\frac{1}{12}$ inch.
♃ Perennial herb.	? Sign of doubt.
♄ Woody stem.	! Sign of certainty.
∞ Indefinite or numerous.	∩ Climbing plant.
☿ Perfect flower.	△ Evergreen.
♀ Female flower.	
♂ Male flower.	

TABULAR VIEW OF THE VEGETABLE KINGDOM.

Kingdom.	Series.	Class.	Sub-Class.	Division.	Order.
Plants. (Vegetable Kingdom.)	Phenogams. (I. Series.)	Dicotyledons. (1 class.)	Angiosperms.	Polypetalous.	
				Gamopetalous.	
				Apetalous.	
			Gymnosperms	Conifers.	
				Cycads.	
		Monocotyledons. (2 class.)	Spadiceous.		
			Petaloideous.		
			Glumaceous.		
	Cryptogams. (II. Series.)	Acrogens. (3 class.)	Ferns.		
			Lycopods.		
			Equisetaceae.		
		Anophytes. (4 class.)	Mosses.		
			Liverworts.		
		Thallophytes. (5 class.)	Algae.		
			Lichens.		
			Fungi.		
		Protophytes. (unicellular.)	Desmids.		
			Diatoms.		
			Coccoliths.		

(SPECIMEN PAGE OF PLANT DESCRIPTION.)

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. 8. *Date, 4, 26, '78.*

ROOT.—Kind *multiple*, shape *fibrous*.

STEM.—Class *exogenous*, kind *scape*, shape *terete*, surface *glabrous*, character *herbaceous*, direction *erect*, duration *perennial*, branches 0, height 6′–8′, juice *red*, *acrid*, (*of rhizoma.*)

LEAF.—Arrangement *solitary*, venation *reticulated*, form *reniform*, base *lobed*, apex *rounded*, margins *lobed*, surface *glaucous*, vernation *convolute*, texture *fleshy*, color *pale green*, duration *deciduous*, compound . . . . . petiole *long*, *thick*, stipules 0.

INFLORESCENCE.—Class *solitary*, mode *solitary*, regularity *regular*, symmetry *unsym.*, No. parts 4, perfectness *perfect*, completeness *complete*, bracts 0, peduncle *long*, receptacle *small*.

COROLLA.—Color *white*, shape *sub rosa.*, cohesion *polypetalous*, insertion *inferior*, No. petals *indef.*, shape of *obovate*, æstivation *imbricate*, duration *deciduous*.

STAMENS.—No. *indef.*, cohesion *distinct*, insertion *hypogynous*, length *unequal*, position. . . . .

ANTHERS.—Attachment *adnate*, shape *oblong*, aspect *extrorse*, dehiscence *longitud.*, No. cells 2, pollen . . . . . .

PISTILS.—No. 1, length *included*, cohesion . . . . . , style *very short*, stigma *subsessile*, *2-lobed*.

FERTILIZATION.—Flower is open and pollen abundant that wind may aid in fertilization. The white flower should attract insects.

OVARY.—Insertion *superior*, shape *ovoid*, No. cells 1, placentation *parietal*, ovules *numerous* (*give diagram.*)

FRUIT.—Kind *dry*, dehiscence . . . . , ripens *July*, *Aug.*

SEEDS.—No. . . . . , shape . . . . , surface . . . . , embryo . . . .

REMARKS.—*One of our earliest and most beautiful wild flowers, and worthy of cultivation; abundant, medicinal.*

ORDER.	GENUS.	SPECIES.
Papaveraceæ.	*Sanguinaria.*	*Canadensis.*

NAME. { Botanical. *Sanguinaria Canadensis.* Common. *Blood Root.*

HABITAT. *Woods.* LOCALITY. *West Chester, Penn'a.*

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

*No.*_____ *Date*_____

ROOT. *Kind*_____ *shape*_____

STEM. *Class*_____ *kind*_____ *shape*_____

*surface*_____ *character*_____ *direction*_____

*Duration*_____ *branches*_____ *height*_____

*Underground Stem*_____

LEAF. *Arrangement*_____ *venation*_____ *forms*_____

*base*_____ *apex*_____ *margins*_____

*surfaces*_____ *vernation*_____ *texture*_____

*color*_____ *duration*_____ *compounded*_____

*petiole*_____ *stipules*_____

*Radical Leaves*_____

Inflorescence. *Class*_____ *mode*_____ *regularity*_____

*symmetry*_____ *No. parts*_____ *perfectness*_____

*completeness*_____ *bracts*_____

*peduncle*_____ *receptacle*_____

Calyx. *Color*_____ *shape*_____ *cohesion*_____ *relations*_____

*insertion*_____ *No. sepals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Corolla. *Color*_____ *shape*_____ *cohesion*_____

*insertion*_____ *No. petals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Stamens. *No.*_____ *cohesion*_____ *insertion*_____

*length*_____ *position*_____

Anthers. *Attachment*_____ *shape*_____ *aspect*_____

*dehiscence*_____ *No. cells*_____ *pollen*_____

Pistils. *No.*_____ *length*_____ *cohesion*_____

*style*_____ *stigma*_____

Fertilization._____

Ovary. *Insertion*_____ *shape*_____ *No. cells*_____

*placentation*_____ *ovules*_____

Fruit. *Kind*_____ *dehiscence*_____ *ripens*_____

Seeds. *No.*_____ *shape*_____ *surface*_____ *embryo*_____

REMARKS._____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

NAME. { *Botanical*_____ / *Common*_____

*Habitat.*_____ *Locality*_____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

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*No.*_____ *Date*_____

ROOT. *Kind*_____ *shape*_____

STEM. *Class*_____ *kind*_____ *shape*_____

*surface*_____ *character*_____ *direction*_____

*Duration*_____ *branches*_____ *height*_____

*Underground Stem*_____

LEAF. *Arrangement*_____ *venation*_____ *forms*_____

*base*_____ *apex*_____ *margins*_____

*surfaces*_____ *vernation*_____ *texture*_____

*color*_____ *duration*_____ *compounded*_____

*petiole*_____ *stipules*_____

*Radical Leaves*_____

Inflorescence. *Class*_____ *mode*_____ *regularity*_____

*symmetry*_____ *No. parts*_____ *perfectness*_____

*completeness*_____ *bracts*_____

*peduncle*_____ *receptacle*_____

Calyx. *Color*_____ *shape*_____ *cohesion*_____ *relations*_____

*insertion*_____ *No. sepals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Corolla. *Color*_____ *shape*_____ *cohesion*_____

*insertion*_____ *No. petals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Stamens. *No.*_____ *cohesion*_____ *insertion*_____

*length*_____ *position*_____

Anthers. *Attachment*_____ *shape*_____ *aspect*_____

*dehiscence*_____ *No. cells*_____ *pollen*_____

Pistils. *No.*_____ *length*_____ *cohesion*_____

*style*_____ *stigma*_____

Fertilization._____

_____

Ovary. *Insertion*_____ *shape*_____ *No. cells*_____

*placentation*_____ *ovules*_____

Fruit. *Kind*_____ *dehiscence*_____ *ripens*_____

Seeds. *No.*_____ *shape*_____ *surface*_____ *embryo*_____

REMARKS._____

_____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

_____

NAME. *Botanical*_____

*Common*_____

*Habitat.*_____ *Locality*_____

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*No.*_____ *Date*_____

ROOT. *Kind*_____ *shape*_____

STEM. *Class*_____ *kind*_____ *shape*_____

*surface*_____ *character*_____ *direction*_____

*Duration*_____ *branches*_____ *height*_____

*Underground Stem*_____

LEAF. *Arrangement*_____ *venation*_____ *forms*_____

*base*_____ *apex*_____ *margins*_____

*surfaces*_____ *vernation*_____ *texture*_____

*color*_____ *duration*_____ *compounded*_____

*petiole*_____ *stipules*_____

*Radical Leaves*_____

Inflorescence. *Class*_____ *mode*_____ *regularity*_____

*symmetry*_____ *No. parts*_____ *perfectness*_____

*completeness*_____ *bracts*_____

*peduncle*_____ *receptacle*_____

Calyx. *Color*_____ *shape*_____ *cohesion*_____ *relations*_____

*insertion*_____ *No. sepals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Corolla. *Color*_____ *shape*_____ *cohesion*_____

*insertion*_____ *No. petals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Stamens. *No.*_____ *cohesion*_____ *insertion*_____

*length*_____ *position*_____

Anthers. *Attachment*_____ *shape*_____ *aspect*_____

*dehiscence*_____ *No. cells*_____ *pollen*_____

Pistils. *No.*_____ *length*_____ *cohesion*_____

*style*_____ *stigma*_____

Fertilization._____

Ovary. *Insertion*_____ *shape*_____ *No. cells*_____

*placentation*_____ *ovules*_____

Fruit. *Kind*_____ *dehiscence*_____ *ripens*_____

Seeds. *No.*_____ *shape*_____ *surface*_____ *embryo*_____

REMARKS._____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

NAME. { *Botanical*_____
*Common*_____

*Habitat.*_____ *Locality*_____

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No. _____ *Date* _____

ROOT. *Kind* _____ *shape* _____

STEM. *Class* _____ *kind* _____ *shape* _____

surface _____ *character* _____ *direction* _____

Duration _____ *branches* _____ *height* _____

Underground Stem _____

LEAF. *Arrangement* _____ *venation* _____ *forms* _____

_____ *base* _____ *apex* _____ *margins* _____

_____ *surfaces* _____ *vernation* _____ *texture* _____

_____ *color* _____ *duration* _____ *compounded* _____

_____ *petiole* _____ *stipules* _____

Radical Leaves _____

Inflorescence. *Class* _____ *mode* _____ *regularity* _____

_____ *symmetry* _____ *No. parts* _____ *perfectness* _____

_____ *completeness* _____ *bracts* _____

peduncle _____ *receptacle* _____

Calyx. *Color* _____ *shape* _____ *cohesion* _____ *relations* _____

_____ *insertion* _____ *No. sepals* _____ *shape of* _____

_____ *aestivation* _____ *duration* _____

Corolla. *Color* _____ *shape* _____ *cohesion* _____

insertion _____ *No. petals* _____ *shape of* _____

aestivation _____ *duration* _____

Stamens. *No.* _____ *cohesion* _____ *insertion* _____

length _____ *position* _____

Anthers. *Attachment* _____ *shape* _____ *aspect* _____

dehiscence _____ *No. cells* _____ *pollen* _____

Pistils. *No.* _____ *length* _____ *cohesion* _____

style _____ *stigma* _____

Fertilization. _____

_____

Ovary. *Insertion* _____ *shape* _____ *No. cells* _____

placentation _____ *ovules* _____

Fruit. *Kind* _____ *dehiscence* _____ *ripens* _____

Seeds. *No.* _____ *shape* _____ *surface* _____ *embryo* _____

REMARKS. _____

_____

ORDER. GENUS. SPECIES.

_____

NAME. { *Botanical* _____

{ *Common* _____

Habitat. _____ *Locality* _____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

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(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. ---------- *Date* ----------

ROOT. *Kind* ---------- *shape* ----------

STEM. *Class* ---------- *kind* ---------- *shape* ----------

surface ---------- *character* ---------- *direction* ----------

Duration ---------- *branches* ---------- *height* ----------

Underground Stem ----------

LEAF. *Arrangement* ---------- *venation* ---------- *forms* ----------

base ---------- *apex* ---------- *margins* ----------

surfaces ---------- *vernation* ---------- *texture* ----------

color ---------- *duration* ---------- *compounded* ----------

petiole ---------- *stipules* ----------

Radical Leaves ----------

Inflorescence. *Class* ---------- *mode* ---------- *regularity* ----------

symmetry ---------- *No. parts* ---------- *perfectness* ----------

completeness ---------- *bracts* ----------

peduncle ---------- *receptacle* ----------

Calyx. *Color* ---------- *shape* ---------- *cohesion* ---------- *relations* ----------

insertion ---------- *No. sepals* ---------- *shape of* ----------

aestivation ---------- *duration* ----------

Corolla. *Color* ---------- *shape* ---------- *cohesion* ----------

insertion ---------- *No. petals* ---------- *shape of* ----------

aestivation ---------- *duration* ----------

Stamens. *No.* ---------- *cohesion* ---------- *insertion* ----------

length ---------- *position* ----------

Anthers. *Attachment* ---------- *shape* ---------- *aspect* ----------

dehiscence ---------- *No. cells* ---------- *pollen* ----------

Pistils. *No.* ---------- *length* ---------- *cohesion* ----------

style ---------- *stigma* ----------

Fertilization. ----------

Ovary. *Insertion* ---------- *shape* ---------- *No. cells* ----------

placentation ---------- *ovules* ----------

Fruit. *Kind* ---------- *dehiscence* ---------- *ripens* ----------

Seeds. *No.* ---------- *shape* ---------- *surface* ---------- *embryo* ----------

REMARKS. ----------

ORDER. GENUS. SPECIES.

NAME. { *Botanical* ----------
Common ----------

Habitat. ---------- *Locality* ----------

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–258 and 272–275.
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(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

*No.*_____ *Date*_____

ROOT. *Kind*_____ *shape*_____

STEM. *Class*_____ *kind*_____ *shape*_____

*surface*_____ *character*_____ *direction*_____

*Duration*_____ *branches*_____ *height*_____

*Underground Stem*_____

LEAF. *Arrangement*_____ *venation*_____ *forms*

_____ *base*_____ *apex*_____ *margins*

_____ *surfaces*_____ *vernation*_____ *texture*

_____ *color*_____ *duration*_____ *compounded*

_____ *petiole*_____ *stipules*_____

*Radical Leaves*_____

Inflorescence. *Class*_____ *mode*_____ *regularity*

_____ *symmetry*_____ *No. parts*_____ *perfectness*

_____ *completeness*_____ *bracts*_____

*peduncle*_____ *receptacle*_____

Calyx. *Color*_____ *shape*_____ *cohesion*_____ *relations*

_____ *insertion*_____ *No. sepals*_____ *shape of*

_____ *aestivation*_____ *duration*_____

Corolla. *Color*_____ *shape*_____ *cohesion*_____

*insertion*_____ *No. petals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Stamens. *No.*_____ *cohesion*_____ *insertion*_____

*length*_____ *position*_____

Anthers. *Attachment*_____ *shape*_____ *aspect*_____

*dehiscence*_____ *No. cells*_____ *pollen*_____

Pistils. *No.*_____ *length*_____ *cohesion*_____

*style*_____ *stigma*_____

Fertilization._____

_____

Ovary. *Insertion*_____ *shape*_____ *No. cells*_____

*placentation*_____ *ovules*_____

Fruit. *Kind*_____ *dehiscence*_____ *ripens*_____

Seeds. *No.*_____ *shape*_____ *surface*_____ *embryo*_____

REMARKS._____

_____

ORDER. GENUS. SPECIES.

_____

NAME. { *Botanical*_____

*Common*_____

*Habitat.*_____ *Locality*_____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256-253 and 272-275.
2. See Gray's Lessons, figs. 175, 212-214, also Wood's Class-book, figs. 305-308.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

*No.*_____ *Date*_____

ROOT. *Kind*_____ *shape*_____

STEM. *Class*_____ *kind*_____ *shape*_____

*surface*_____ *character*_____ *direction*_____

*Duration*_____ *branches*_____ *height*_____

*Underground Stem*_____

LEAF. *Arrangement*_____ *venation*_____ *forms*_____

*base*_____ *apex*_____ *margins*_____

*surfaces*_____ *vernation*_____ *texture*_____

*color*_____ *duration*_____ *compounded*_____

*petiole*_____ *stipules*_____

*Radical Leaves*_____

Inflorescence. *Class*_____ *mode*_____ *regularity*_____

*symmetry*_____ *No. parts*_____ *perfectness*_____

*completeness*_____ *bracts*_____

*peduncle*_____ *receptacle*_____

Calyx. *Color*_____ *shape*_____ *cohesion*_____ *relations*_____

*insertion*_____ *No. sepals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Corolla. *Color*_____ *shape*_____ *cohesion*_____

*insertion*_____ *No. petals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Stamens. *No.*_____ *cohesion*_____ *insertion*_____

*length*_____ *position*_____

Anthers. *Attachment*_____ *shape*_____ *aspect*_____

*dehiscence*_____ *No. cells*_____ *pollen*_____

Pistils. *No.*_____ *length*_____ *cohesion*_____

*style*_____ *stigma*_____

Fertilization._____

_____

Ovary. *Insertion*_____ *shape*_____ *No. cells*_____

*placentation*_____ *ovules*_____

Fruit. *Kind*_____ *dehiscence*_____ *ripens*_____

Seeds. *No.*_____ *shape*_____ *surface*_____ *embryo*_____

REMARKS._____

_____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

_____

NAME. { *Botanical*_____

*Common*_____

*Habitat.*_____ *Locality*_____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256-253 and 272-275.
2. See Gray's Lessons, figs. 175, 212-214, also Wood's Class-book, figs. 305-308.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. ---------- *Date* ----------

ROOT. *Kind* ---------- *shape* ----------

STEM. *Class* ---------- *kind* ---------- *shape* ----------

surface ---------- *character* ---------- *direction* ----------

Duration ---------- *branches* ---------- *height* ----------

Underground Stem ----------

LEAF. *Arrangement* ---------- *venation* ---------- *forms*

---------- *base* ---------- *apex* ---------- *margins*

---------- *surfaces* ---------- *vernation* ---------- *texture*

---------- *color* ---------- *duration* ---------- *compounded*

---------- *petiole* ---------- *stipules* ----------

Radical Leaves ----------

Inflorescence. *Class* ---------- *mode* ---------- *regularity*

---------- *symmetry* ---------- *No. parts* ---------- *perfectness*

---------- *completeness* ---------- *bracts* ----------

peduncle ---------- *receptacle* ----------

Calyx. *Color* ---------- *shape* ---------- *cohesion* ---------- *relations*

---------- *insertion* ---------- *No. sepals* ---------- *shape of*

---------- *aestivation* ---------- *duration* ----------

Corolla. *Color* ---------- *shape* ---------- *cohesion* ----------

insertion ---------- *No. petals* ---------- *shape of* ----------

aestivation ---------- *duration* ----------

Stamens. *No.* ---------- *cohesion* ---------- *insertion* ----------

length ---------- *position* ----------

Anthers. *Attachment* ---------- *shape* ---------- *aspect* ----------

dehiscence ---------- *No. cells* ---------- *pollen* ----------

Pistils. *No.* ---------- *length* ---------- *cohesion* ----------

style ---------- *stigma* ----------

Fertilization. ----------

Ovary. *Insertion* ---------- *shape* ---------- *No. cells* ----------

placentation ---------- *ovules* ----------

Fruit. *Kind* ---------- *dehiscence* ---------- *ripens* ----------

Seeds. *No.* ---------- *shape* ---------- *surface* ---------- *embryo* ----------

REMARKS. ----------

ORDER. GENUS. SPECIES.

NAME. { *Botanical* ----------
{ *Common* ----------

Habitat. ---------- *Locality* ----------

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. ---------- *Date* ----------

ROOT. *Kind* ---------- *shape* ----------

STEM. *Class* ---------- *kind* ---------- *shape* ----------

surface ---------- *character* ---------- *direction* ----------

Duration ---------- *branches* ---------- *height* ----------

Underground Stem ----------

LEAF. *Arrangement* ---------- *venation* ---------- *forms* ----------

base ---------- *apex* ---------- *margins* ----------

surfaces ---------- *vernation* ---------- *texture* ----------

color ---------- *duration* ---------- *compounded* ----------

petiole ---------- *stipules* ----------

Radical Leaves ----------

Inflorescence. *Class* ---------- *mode* ---------- *regularity* ----------

symmetry ---------- *No. parts* ---------- *perfectness* ----------

completeness ---------- *bracts* ----------

peduncle ---------- *receptacle* ----------

Calyx. *Color* ---------- *shape* ---------- *cohesion* ---------- *relations* ----------

insertion ---------- *No. sepals* ---------- *shape of* ----------

aestivation ---------- *duration* ----------

Corolla. *Color* ---------- *shape* ---------- *cohesion* ----------

insertion ---------- *No. petals* ---------- *shape of* ----------

aestivation ---------- *duration* ----------

Stamens. *No.* ---------- *cohesion* ---------- *insertion* ----------

length ---------- *position* ----------

Anthers. *Attachment* ---------- *shape* ---------- *aspect* ----------

dehiscence ---------- *No. cells* ---------- *pollen* ----------

Pistils. *No.* ---------- *length* ---------- *cohesion* ----------

style ---------- *stigma* ----------

Fertilization. ----------

Ovary. *Insertion* ---------- *shape* ---------- *No. cells* ----------

placentation ---------- *ovules* ----------

Fruit. *Kind* ---------- *dehiscence* ---------- *ripens* ----------

Seeds. *No.* ---------- *shape* ---------- *surface* ---------- *embryo* ----------

REMARKS. ----------

ORDER. GENUS. SPECIES.

NAME. { *Botanical* ----------
Common ----------

Habitat. ---------- *Locality* ----------

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–263 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

*No.*_____ *Date*_____

ROOT. *Kind*_____ *shape*_____

STEM. *Class*_____ *kind*_____ *shape*_____

*surface*_____ *character*_____ *direction*_____

*Duration*_____ *branches*_____ *height*_____

*Underground Stem*_____

LEAF. *Arrangement*_____ *venation*_____ *forms*_____

_____ *base*_____ *apex*_____ *margins*_____

_____ *surfaces*_____ *vernation*_____ *texture*_____

_____ *color*_____ *duration*_____ *compounded*_____

_____ *petiole*_____ *stipules*_____

*Radical Leaves*_____

Inflorescence. *Class*_____ *mode*_____ *regularity*_____

_____ *symmetry*_____ *No. parts*_____ *perfectness*_____

_____ *completeness*_____ *bracts*_____

*peduncle*_____ *receptacle*_____

Calyx. *Color*_____ *shape*_____ *cohesion*_____ *relations*_____

_____ *insertion*_____ *No. sepals*_____ *shape of*_____

_____ *aestivation*_____ *duration*_____

Corolla. *Color*_____ *shape*_____ *cohesion*_____

*insertion*_____ *No. petals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Stamens. *No.*_____ *cohesion*_____ *insertion*_____

*length*_____ *position*_____

Anthers. *Attachment*_____ *shape*_____ *aspect*_____

*dehiscence*_____ *No. cells*_____ *pollen*_____

Pistils. *No.*_____ *length*_____ *cohesion*_____

*style*_____ *stigma*_____

Fertilization._____

_____

Ovary. *Insertion*_____ *shape*_____ *No. cells*_____

*placentation*_____ *ovules*_____

Fruit. *Kind*_____ *dehiscence*_____ *ripens*_____

Seeds. *No.*_____ *shape*_____ *surface*_____ *embryo*_____

REMARKS._____

_____

ORDER. GENUS. SPECIES.

_____

NAME. { *Botanical*_____

{ *Common*_____

*Habitat.*_____ *Locality*_____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. _____ *Date* _____

ROOT. *Kind* _____ *shape* _____

STEM. *Class* _____ *kind* _____ *shape* _____

surface _____ *character* _____ *direction* _____

Duration _____ *branches* _____ *height* _____

Underground Stem _____

LEAF. *Arrangement* _____ *venation* _____ *forms* _____

_____ *base* _____ *apex* _____ *margins* _____

_____ *surfaces* _____ *vernation* _____ *texture* _____

_____ *color* _____ *duration* _____ *compounded* _____

_____ *petiole* _____ *stipules* _____

Radical Leaves _____

Inflorescence. *Class* _____ *mode* _____ *regularity* _____

_____ *symmetry* _____ *No. parts* _____ *perfectness* _____

_____ *completeness* _____ *bracts* _____

peduncle _____ *receptacle* _____

Calyx. *Color* _____ *shape* _____ *cohesion* _____ *relations* _____

_____ *insertion* _____ *No. sepals* _____ *shape of* _____

_____ *aestivation* _____ *duration* _____

Corolla. *Color* _____ *shape* _____ *cohesion* _____

insertion _____ *No. petals* _____ *shape of* _____

aestivation _____ *duration* _____

Stamens. *No.* _____ *cohesion* _____ *insertion* _____

length _____ *position* _____

Anthers. *Attachment* _____ *shape* _____ *aspect* _____

dehiscence _____ *No. cells* _____ *pollen* _____

Pistils. *No.* _____ *length* _____ *cohesion* _____

style _____ *stigma* _____

Fertilization. _____

_____

Ovary. *Insertion* _____ *shape* _____ *No. cells* _____

placentation _____ *ovules* _____

Fruit. *Kind* _____ *dehiscence* _____ *ripens* _____

Seeds. *No.* _____ *shape* _____ *surface* _____ *embryo* _____

REMARKS. _____

_____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

_____

NAME. { *Botanical* _____

Common _____

Habitat. _____ *Locality* _____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256-253 and 272-275.
2. See Gray's Lessons, figs. 175, 212-214, also Wood's Class-book, figs. 305-308.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. _____ *Date* _____

ROOT. *Kind* _____ *shape* _____

STEM. *Class* _____ *kind* _____ *shape* _____

surface _____ *character* _____ *direction* _____

Duration _____ *branches* _____ *height* _____

Underground Stem _____

LEAF. *Arrangement* _____ *venation* _____ *forms* _____

_____ *base* _____ *apex* _____ *margins* _____

_____ *surfaces* _____ *vernation* _____ *texture* _____

_____ *color* _____ *duration* _____ *compounded* _____

_____ *petiole* _____ *stipules* _____

Radical Leaves _____

Inflorescence. *Class* _____ *mode* _____ *regularity* _____

_____ *symmetry* _____ *No. parts* _____ *perfectness* _____

_____ *completeness* _____ *bracts* _____

peduncle _____ *receptacle* _____

Calyx. *Color* _____ *shape* _____ *cohesion* _____ *relations* _____

_____ *insertion* _____ *No. sepals* _____ *shape of* _____

_____ *aestivation* _____ *duration* _____

Corolla. *Color* _____ *shape* _____ *cohesion* _____

insertion _____ *No. petals* _____ *shape of* _____

aestivation _____ *duration* _____

Stamens. *No.* _____ *cohesion* _____ *insertion* _____

length _____ *position* _____

Anthers. *Attachment* _____ *shape* _____ *aspect* _____

dehiscence _____ *No. cells* _____ *pollen* _____

Pistils. *No.* _____ *length* _____ *cohesion* _____

style _____ *stigma* _____

Fertilization. _____

_____

Ovary. *Insertion* _____ *shape* _____ *No. cells* _____

placentation _____ *ovules* _____

Fruit. *Kind* _____ *dehiscence* _____ *ripens* _____

Seeds. *No.* _____ *shape* _____ *surface* _____ *embryo* _____

REMARKS. _____

_____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

_____

NAME. *Botanical* _____

Common _____

Habitat. _____ *Locality* _____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 395–398.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. ---------- *Date* ---------- ----------

ROOT. *Kind* ---------- *shape* ---------- ----------

STEM. *Class* ---------- *kind* ---------- *shape* ----------

surface ---------- *character* ---------- *direction* ----------

Duration ---------- *branches* ---------- *height* ----------

Underground Stem ----------

LEAF. *Arrangement* ---------- *venation* ---------- *forms*

---------- *base* ---------- *apex* ---------- *margins*

---------- *surfaces* ---------- *vernation* ---------- *texture*

---------- *color* ---------- *duration* ---------- *compounded*

---------- *petiole* ---------- *stipules* ----------

Radical Leaves ----------

Inflorescence. *Class* ---------- *mode* ---------- *regularity*

---------- *symmetry* ---------- *No. parts* ---------- *perfectness*

---------- *completeness* ---------- *bracts* ----------

peduncle ---------- *receptacle* ----------

Calyx *Color* ---------- *shape* ---------- *cohesion* ---------- *relations*

---------- ---------- *insertion* ---------- *No. sepals* ---------- *shape of*

---------- *aestivation* ---------- *duration* ----------

Corolla. *Color* ---------- *shape* ---------- *cohesion* ----------

insertion ---------- *No. petals* ---------- *shape of* ----------

aestivation ---------- *duration* ----------

Stamens. *No.* ---------- *cohesion* ---------- *insertion* ----------

length ---------- *position* ----------

Anthers. *Attachment* ---------- *shape* ---------- *aspect* ----------

dehiscence ---------- *No. cells* ---------- *pollen* ----------

Pistils. *No.* ---------- *length* ---------- *cohesion* ----------

style ---------- *stigma* ----------

Fertilization. ----------

Ovary. *Insertion* ---------- *shape* ---------- *No. cells* ----------

placentation ---------- *ovules* ----------

Fruit. *Kind* ---------- *dehiscence* ---------- *ripens* ----------

Seeds. *No.* ---------- *shape* ---------- *surface* ---------- *embryo* ----------

REMARKS. ----------

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

NAME. { *Botanical* ----------
Common ----------

Habitat. ---------- *Locality* ----------

1. See Gray's Lessons, figs. 190, 191, 223, 224. also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. _____ *Date* _____

ROOT. *Kind* _____ *shape* _____

STEM. *Class* _____ *kind* _____ *shape* _____

surface _____ *character* _____ *direction* _____

Duration _____ *branches* _____ *height* _____

Underground Stem _____

LEAF. *Arrangement* _____ *venation* _____ *forms* _____

_____ *base* _____ *apex* _____ *margins* _____

_____ *surfaces* _____ *vernation* _____ *texture* _____

_____ *color* _____ *duration* _____ *compounded* _____

_____ *petiole* _____ *stipules* _____

Radical Leaves _____

Inflorescence. *Class* _____ *mode* _____ *regularity* _____

_____ *symmetry* _____ *No. parts* _____ *perfectness* _____

_____ *completeness* _____ *bracts* _____

peduncle _____ *receptacle* _____

Calyx. *Color* _____ *shape* _____ *cohesion* _____ *relations* _____

_____ *insertion* _____ *No. sepals* _____ *shape of* _____

_____ *aestivation* _____ *duration* _____

Corolla. *Color* _____ *shape* _____ *cohesion* _____

insertion _____ *No. petals* _____ *shape of* _____

aestivation _____ *duration* _____

Stamens. *No.* _____ *cohesion* _____ *insertion* _____

length _____ *position* _____

Anthers. *Attachment* _____ *shape* _____ *aspect* _____

dehiscence _____ *No. cells* _____ *pollen* _____

Pistils. *No.* _____ *length* _____ *cohesion* _____

style _____ *stigma* _____

Fertilization. _____

_____

Ovary. *Insertion* _____ *shape* _____ *No. cells* _____

placentation _____ *ovules* _____

Fruit. *Kind* _____ *dehiscence* _____ *ripens* _____

Seeds. *No.* _____ *shape* _____ *surface* _____ *embryo* _____

REMARKS. _____

_____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

_____

NAME. { *Botanical* _____

{ *Common* _____

Habitat. _____ *Locality* _____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. _____ *Date* _____

ROOT. *Kind* _____ *shape* _____

STEM. *Class* _____ *kind* _____ *shape* _____

surface _____ *character* _____ *direction* _____

Duration _____ *branches* _____ *height* _____

Underground Stem _____

LEAF. *Arrangement* _____ *venation* _____ *forms* _____

_____ *base* _____ *apex* _____ *margins* _____

_____ *surfaces* _____ *vernation* _____ *texture* _____

_____ *color* _____ *duration* _____ *compounded* _____

_____ *petiole* _____ *stipules* _____

Radical Leaves _____

Inflorescence. *Class* _____ *mode* _____ *regularity* _____

_____ *symmetry* _____ *No. parts* _____ *perfectness* _____

_____ *completeness* _____ *bracts* _____

peduncle _____ *receptacle* _____

Calyx. *Color* _____ *shape* _____ *cohesion* _____ *relations* _____

_____ *insertion* _____ *No. sepals* _____ *shape of* _____

_____ *aestivation* _____ *duration* _____

Corolla. *Color* _____ *shape* _____ *cohesion* _____

insertion _____ *No. petals* _____ *shape of* _____

aestivation _____ *duration* _____

Stamens. *No.* _____ *cohesion* _____ *insertion* _____

length _____ *position* _____

Anthers. *Attachment* _____ *shape* _____ *aspect* _____

dehiscence _____ *No. cells* _____ *pollen* _____

Pistils. *No.* _____ *length* _____ *cohesion* _____

style _____ *stigma* _____

Fertilization. _____

_____

Ovary. *Insertion* _____ *shape* _____ *No. cells* _____

placentation _____ *ovules* _____

Fruit. *Kind* _____ *dehiscence* _____ *ripens* _____

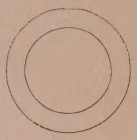
Seeds. *No.* _____ *shape* _____ *surface* _____ *embryo* _____

REMARKS. _____

_____

LEAF.

PLAN OF FLOWER.[1]



SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

_____

NAME. { *Botanical* _____

Common _____

Habitat. _____ *Locality* _____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. ____ *Date* ____

ROOT. *Kind* ____ *shape* ____

STEM. *Class* ____ *kind* ____ *shape* ____

surface ____ *character* ____ *direction* ____

Duration ____ *branches* ____ *height* ____

Underground Stem ____

LEAF. *Arrangement* ____ *venation* ____ *forms* ____

base ____ *apex* ____ *margins* ____

surfaces ____ *vernation* ____ *texture* ____

color ____ *duration* ____ *compounded* ____

petiole ____ *stipules* ____

Radical Leaves ____

Inflorescence. *Class* ____ *mode* ____ *regularity* ____

symmetry ____ *No. parts* ____ *perfectness* ____

completeness ____ *bracts* ____

peduncle ____ *receptacle* ____

Calyx. *Color* ____ *shape* ____ *cohesion* ____ *relations* ____

insertion ____ *No. sepals* ____ *shape of* ____

aestivation ____ *duration* ____

Corolla. *Color* ____ *shape* ____ *cohesion* ____

insertion ____ *No. petals* ____ *shape of* ____

aestivation ____ *duration* ____

Stamens. *No.* ____ *cohesion* ____ *insertion* ____

length ____ *position* ____

Anthers. *Attachment* ____ *shape* ____ *aspect* ____

dehiscence ____ *No. cells* ____ *pollen* ____

Pistils. *No.* ____ *length* ____ *cohesion* ____

style ____ *stigma* ____

Fertilization. ____

____

Ovary. *Insertion* ____ *shape* ____ *No. cells* ____

placentation ____ *ovules* ____

Fruit. *Kind* ____ *dehiscence* ____ *ripens* ____

Seeds. *No.* ____ *shape* ____ *surface* ____ *embryo* ____

REMARKS. ____

____

ORDER. GENUS. SPECIES.

____

NAME. { *Botanical* ____
Common ____

Habitat. ____ *Locality* ____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. ____ *Date* ____

ROOT. *Kind* ____ *shape* ____

STEM. *Class* ____ *kind* ____ *shape* ____

surface ____ *character* ____ *direction* ____

Duration ____ *branches* ____ *height* ____

Underground Stem ____

LEAF. *Arrangement* ____ *venation* ____ *forms* ____

base ____ *apex* ____ *margins* ____

surfaces ____ *vernation* ____ *texture* ____

color ____ *duration* ____ *compounded* ____

petiole ____ *stipules* ____

Radical Leaves ____

Inflorescence. *Class* ____ *mode* ____ *regularity* ____

symmetry ____ *No. parts* ____ *perfectness* ____

completeness ____ *bracts* ____

peduncle ____ *receptacle* ____

Calyx. *Color* ____ *shape* ____ *cohesion* ____ *relations* ____

insertion ____ *No. sepals* ____ *shape of* ____

aestivation ____ *duration* ____

Corolla. *Color* ____ *shape* ____ *cohesion* ____

insertion ____ *No. petals* ____ *shape of* ____

aestivation ____ *duration* ____

Stamens. *No.* ____ *cohesion* ____ *insertion* ____

length ____ *position* ____

Anthers. *Attachment* ____ *shape* ____ *aspect* ____

dehiscence ____ *No. cells* ____ *pollen* ____

Pistils. *No.* ____ *length* ____ *cohesion* ____

style ____ *stigma* ____

Fertilization. ____

____

Ovary. *Insertion* ____ *shape* ____ *No. cells* ____

placentation ____ *ovules* ____

Fruit. *Kind* ____ *dehiscence* ____ *ripens* ____

Seeds. *No.* ____ *shape* ____ *surface* ____ *embryo* ____

REMARKS. ____

____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

____

NAME. *Botanical* ____

Common ____

Habitat. ____ *Locality* ____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

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(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. _____ *Date* _____

ROOT. *Kind* _____ *shape* _____

STEM. *Class* _____ *kind* _____ *shape* _____

surface _____ *character* _____ *direction* _____

Duration _____ *branches* _____ *height* _____

Underground Stem _____

LEAF. *Arrangement* _____ *venation* _____ *forms* _____

_____ *base* _____ *apex* _____ *margins* _____

_____ *surfaces* _____ *vernation* _____ *texture* _____

_____ *color* _____ *duration* _____ *compounded* _____

_____ *petiole* _____ *stipules* _____

Radical Leaves _____

Inflorescence. *Class* _____ *mode* _____ *regularity* _____

_____ *symmetry* _____ *No. parts* _____ *perfectness* _____

_____ *completeness* _____ *bracts* _____

peduncle _____ *receptacle* _____

Calyx. *Color* _____ *shape* _____ *cohesion* _____ *relations* _____

_____ *insertion* _____ *No. sepals* _____ *shape of* _____

_____ *aestivation* _____ *duration* _____

Corolla. *Color* _____ *shape* _____ *cohesion* _____

insertion _____ *No. petals* _____ *shape of* _____

aestivation _____ *duration* _____

Stamens. *No.* _____ *cohesion* _____ *insertion* _____

length _____ *position* _____

Anthers. *Attachment* _____ *shape* _____ *aspect* _____

dehiscence _____ *No. cells* _____ *pollen* _____

Pistils. *No.* _____ *length* _____ *cohesion* _____

style _____ *stigma* _____

Fertilization. _____

_____

Ovary. *Insertion* _____ *shape* _____ *No. cells* _____

placentation _____ *ovules* _____

Fruit. *Kind* _____ *dehiscence* _____ *ripens* _____

Seeds. *No.* _____ *shape* _____ *surface* _____ *embryo* _____

REMARKS. _____

_____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

_____

NAME. { *Botanical* _____

Common _____

Habitat. _____ *Locality* _____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

*No.*_____ *Date*_____

ROOT. *Kind*_____ *shape*_____

STEM. *Class*_____ *kind*_____ *shape*_____

*surface*_____ *character*_____ *direction*_____

*Duration*_____ *branches*_____ *height*_____

*Underground Stem*_____

LEAF. *Arrangement*_____ *venation*_____ *forms*_____

*base*_____ *apex*_____ *margins*_____

*surfaces*_____ *vernation*_____ *texture*_____

*color*_____ *duration*_____ *compounded*_____

*petiole*_____ *stipules*_____

*Radical Leaves*_____

Inflorescence. *Class*_____ *mode*_____ *regularity*_____

*symmetry*_____ *No. parts*_____ *perfectness*_____

*completeness*_____ *bracts*_____

*peduncle*_____ *receptacle*_____

Calyx. *Color*_____ *shape*_____ *cohesion*_____ *relations*_____

*insertion*_____ *No. sepals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Corolla. *Color*_____ *shape*_____ *cohesion*_____

*insertion*_____ *No. petals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Stamens. *No.*_____ *cohesion*_____ *insertion*_____

*length*_____ *position*_____

Anthers. *Attachment*_____ *shape*_____ *aspect*_____

*dehiscence*_____ *No. cells*_____ *pollen*_____

Pistils. *No.*_____ *length*_____ *cohesion*_____

*style*_____ *stigma*_____

Fertilization._____

Ovary. *Insertion*_____ *shape*_____ *No. cells*_____

*placentation*_____ *ovules*_____

Fruit. *Kind*_____ *dehiscence*_____ *ripens*_____

Seeds. *No.*_____ *shape*_____ *surface*_____ *embryo*_____

REMARKS._____

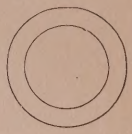
ORDER. GENUS. SPECIES.

NAME. { *Botanical*_____ *Common*_____

*Habitat.*_____ *Locality*_____

LEAF.

PLAN OF FLOWER.[1]



SECTION OF FLOWER.[2]

STAMEN.

OVARY.

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 213–214, also Wood's Class-book, figs. 305–308.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. ---------- *Date* ----------

ROOT. *Kind* ---------- *shape* ----------

STEM. *Class* ---------- *kind* ---------- *shape* ----------

surface ---------- *character* ---------- *direction* ----------

Duration ---------- *branches* ---------- *height* ----------

Underground Stem ----------

LEAF. *Arrangement* ---------- *venation* ---------- *forms*

---------- *base* ---------- *apex* ---------- *margins*

---------- *surfaces* ---------- *vernation* ---------- *texture*

---------- *color* ---------- *duration* ---------- *compounded*

---------- *petiole* ---------- *stipules* ----------

Radical Leaves ----------

Inflorescence. *Class* ---------- *mode* ---------- *regularity*

---------- *symmetry* ---------- *No. parts* ---------- *perfectness*

---------- *completeness* ---------- *bracts* ----------

peduncle ---------- *receptacle* ----------

Calyx. *Color* ---------- *shape* ---------- *cohesion* ---------- *relations*

---------- *insertion* ---------- *No. sepals* ---------- *shape of*

---------- *aestivation* ---------- *duration* ----------

Corolla. *Color* ---------- *shape* ---------- *cohesion* ----------

insertion ---------- *No. petals* ---------- *shape of* ----------

aestivation ---------- *duration* ----------

Stamens. *No.* ---------- *cohesion* ---------- *insertion* ----------

length ---------- *position* ---------- ----------

Anthers. *Attachment* ---------- *shape* ---------- *aspect* ----------

dehiscence ---------- *No. cells* ---------- *pollen* ----------

Pistils. *No.* ---------- *length* ---------- *cohesion* ----------

style ---------- *stigma* ----------

Fertilization. ----------

Ovary. *Insertion* ---------- *shape* ---------- *No. cells* ----------

placentation ---------- *ovules* ----------

Fruit. *Kind* ---------- *dehiscence* ---------- *ripens* ----------

Seeds. *No.* ---------- *shape* ---------- *surface* ---------- *embryo* ----------

REMARKS. ----------

ORDER. GENUS. SPECIES.

NAME. { *Botanical* ----------
Common ----------

Habitat. ---------- *Locality* ----------

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. ---------- *Date* ----------

ROOT. *Kind* ---------- *shape* ----------

STEM. *Class* ---------- *kind* ---------- *shape* ----------

surface ---------- *character* ---------- *direction* ----------

Duration ---------- *branches* ---------- *height* ----------

Underground Stem ----------

LEAF. *Arrangement* ---------- *venation* ---------- *forms*

---------- *base* ---------- *apex* ---------- *margins*

---------- *surfaces* ---------- *vernation* ---------- *texture*

---------- *color* ---------- *duration* ---------- *compounded*

---------- *petiole* ---------- *stipules* ----------

Radical Leaves ----------

Inflorescence. *Class* ---------- *mode* ---------- *regularity*

---------- *symmetry* ---------- *No. parts* ---------- *perfectness*

---------- *completeness* ---------- *bracts* ----------

peduncle ---------- *receptacle* ----------

Calyx. *Color* ---------- *shape* ---------- *cohesion* ---------- *relations*

---------- *insertion* ---------- *No. sepals* ---------- *shape of*

---------- *aestivation* ---------- *duration* ----------

Corolla. *Color* ---------- *shape* ---------- *cohesion* ----------

insertion ---------- *No. petals* ---------- *shape of* ----------

aestivation ---------- *duration* ----------

Stamens. *No.* ---------- *cohesion* ---------- *insertion* ----------

length ---------- *position* ----------

Anthers. *Attachment* ---------- *shape* ---------- *aspect* ----------

dehiscence ---------- *No. cells* ---------- *pollen* ----------

Pistils. *No.* ---------- *length* ---------- *cohesion* ----------

style ---------- *stigma* ----------

Fertilization. ----------

Ovary. *Insertion* ---------- *shape* ---------- *No. cells* ----------

placentation ---------- *ovules* ----------

Fruit. *Kind* ---------- *dehiscence* ---------- *ripens* ----------

Seeds. *No.* ---------- *shape* ---------- *surface* ---------- *embryo* ----------

REMARKS. ----------

ORDER. GENUS. SPECIES.

NAME. { *Botanical* ----------
Common ----------

Habitat. ---------- *Locality* ----------

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. _____ *Date* _____

ROOT. *Kind* _____ *shape* _____

STEM. *Class* _____ *kind* _____ *shape* _____

surface _____ *character* _____ *direction* _____

Duration _____ *branches* _____ *height* _____

Underground Stem _____

LEAF. *Arrangement* _____ *venation* _____ *forms* _____

_____ *base* _____ *apex* _____ *margins* _____

_____ *surfaces* _____ *vernation* _____ *texture* _____

_____ *color* _____ *duration* _____ *compounded* _____

_____ *petiole* _____ *stipules* _____

Radical Leaves _____

Inflorescence. *Class* _____ *mode* _____ *regularity* _____

_____ *symmetry* _____ *No. parts* _____ *perfectness* _____

_____ *completeness* _____ *bracts* _____

peduncle _____ *receptacle* _____

Calyx. *Color* _____ *shape* _____ *cohesion* _____ *relations* _____

_____ *insertion* _____ *No. sepals* _____ *shape of* _____

_____ *aestivation* _____ *duration* _____

Corolla. *Color* _____ *shape* _____ *cohesion* _____

insertion _____ *No. petals* _____ *shape of* _____

aestivation _____ *duration* _____

Stamens. *No.* _____ *cohesion* _____ *insertion* _____

length _____ *position* _____

Anthers. *Attachment* _____ *shape* _____ *aspect* _____

dehiscence _____ *No. cells* _____ *pollen* _____

Pistils. *No.* _____ *length* _____ *cohesion* _____

style _____ *stigma* _____

Fertilization. _____

_____

Ovary. *Insertion* _____ *shape* _____ *No. cells* _____

placentation _____ *ovules* _____

Fruit. *Kind* _____ *dehiscence* _____ *ripens* _____

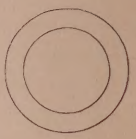
Seeds. *No.* _____ *shape* _____ *surface* _____ *embryo* _____

REMARKS. _____

_____

LEAF.

PLAN OF FLOWER.[1]



SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

_____

NAME. { *Botanical* _____

Common _____

Habitat. _____ *Locality* _____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272-275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

*No.*_____ *Date*_____

ROOT. *Kind*_____ *shape*_____

STEM. *Class*_____ *kind*_____ *shape*_____

*surface*_____ *character*_____ *direction*_____

*Duration*_____ *branches*_____ *height*_____

*Underground Stem*_____

LEAF. *Arrangement*_____ *venation*_____ *forms*

_____ *base*_____ *apex*_____ *margins*

_____ *surfaces*_____ *vernation*_____ *texture*

_____ *color*_____ *duration*_____ *compounded*

_____ *petiole*_____ *stipules*_____

*Radical Leaves*_____

Inflorescence. *Class*_____ *mode*_____ *regularity*

_____ *symmetry*_____ *No. parts*_____ *perfectness*

_____ *completeness*_____ *bracts*_____

*peduncle*_____ *receptacle*_____

Calyx. *Color*_____ *shape*_____ *cohesion*_____ *relations*

_____ *insertion*_____ *No. sepals*_____ *shape of*

_____ *aestivation*_____ *duration*_____

Corolla. *Color*_____ *shape*_____ *cohesion*_____

*insertion*_____ *No. petals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Stamens. *No.*_____ *cohesion*_____ *insertion*_____

*length*_____ *position*_____

Anthers. *Attachment*_____ *shape*_____ *aspect*_____

*dehiscence*_____ *No. cells*_____ *pollen*_____

Pistils. *No.*_____ *length*_____ *cohesion*_____

*style*_____ *stigma*_____

Fertilization._____

_____

Ovary. *Insertion*_____ *shape*_____ *No. cells*_____

*placentation*_____ *ovules*_____

Fruit. *Kind*_____ *dehiscence*_____ *ripens*_____

Seeds. *No.*_____ *shape*_____ *surface*_____ *embryo*_____

REMARKS._____

_____

ORDER. GENUS. SPECIES.

_____

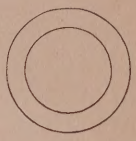
NAME. { *Botanical*_____

*Common*_____

*Habitat.*_____ *Locality*_____

LEAF.

PLAN OF FLOWER.[1]



SECTION OF FLOWER.[2]

STAMEN.

OVARY.

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. ---------- *Date* ----------

ROOT. *Kind* ---------- *shape* ----------

STEM. *Class* ---------- *kind* ---------- *shape* ----------

surface ---------- *character* ---------- *direction* ----------

Duration ---------- *branches* ---------- *height* ----------

Underground Stem ----------

LEAF. *Arrangement* ---------- *venation* ---------- *forms* ----------

base ---------- *apex* ---------- *margins* ----------

surfaces ---------- *vernation* ---------- *texture* ----------

color ---------- *duration* ---------- *compounded* ----------

petiole ---------- *stipules* ----------

Radical Leaves ----------

Inflorescence. *Class* ---------- *mode* ---------- *regularity* ----------

symmetry ---------- *No. parts* ---------- *perfectness* ----------

completeness ---------- *bracts* ----------

peduncle ---------- *receptacle* ----------

Calyx. *Color* ---------- *shape* ---------- *cohesion* ---------- *relations* ----------

insertion ---------- *No. sepals* ---------- *shape of* ----------

aestivation ---------- *duration* ----------

Corolla. *Color* ---------- *shape* ---------- *cohesion* ----------

insertion ---------- *No. petals* ---------- *shape of* ----------

aestivation ---------- *duration* ----------

Stamens. *No.* ---------- *cohesion* ---------- *insertion* ----------

length ---------- *position* ----------

Anthers. *Attachment* ---------- *shape* ---------- *aspect* ----------

dehiscence ---------- *No. cells* ---------- *pollen* ----------

Pistils. *No.* ---------- *length* ---------- *cohesion* ----------

style ---------- *stigma* ----------

Fertilization. ----------

Ovary. *Insertion* ---------- *shape* ---------- *No. cells* ----------

placentation ---------- *ovules* ----------

Fruit. *Kind* ---------- *dehiscence* ---------- *ripens* ----------

Seeds. *No.* ---------- *shape* ---------- *surface* ---------- *embryo* ----------

REMARKS. ----------

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

NAME. { *Botanical* ----------
Common ----------

Habitat. ---------- *Locality* ----------

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272-275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

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(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. ____ *Date* ____

ROOT. *Kind* ____ *shape* ____

STEM. *Class* ____ *kind* ____ *shape* ____

surface ____ *character* ____ *direction* ____

Duration ____ *branches* ____ *height* ____

Underground Stem ____

LEAF. *Arrangement* ____ *venation* ____ *forms* ____

____ *base* ____ *apex* ____ *margins* ____

____ *surfaces* ____ *vernation* ____ *texture* ____

____ *color* ____ *duration* ____ *compounded* ____

____ *petiole* ____ *stipules* ____

Radical Leaves ____

Inflorescence. *Class* ____ *mode* ____ *regularity* ____

____ *symmetry* ____ *No. parts* ____ *perfectness* ____

____ *completeness* ____ *bracts* ____

peduncle ____ *receptacle* ____

Calyx *Color* ____ *shape* ____ *cohesion* ____ *relations* ____

____ *insertion* ____ *No. sepals* ____ *shape of* ____

____ *aestivation* ____ *duration* ____

Corolla. *Color* ____ *shape* ____ *cohesion* ____

insertion ____ *No. petals* ____ *shape of* ____

aestivation ____ *duration* ____

Stamens. *No.* ____ *cohesion* ____ *insertion* ____

length ____ *position* ____

Anthers. *Attachment* ____ *shape* ____ *aspect* ____

dehiscence ____ *No. cells* ____ *pollen* ____

Pistils. *No.* ____ *length* ____ *cohesion* ____

style ____ *stigma* ____

Fertilization. ____

____

Ovary. *Insertion* ____ *shape* ____ *No. cells* ____

placentation ____ *ovules* ____

Fruit. *Kind* ____ *dehiscence* ____ *ripens* ____

Seeds. *No.* ____ *shape* ____ *surface* ____ *embryo* ____

REMARKS. ____

____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

____

NAME. *Botanical* ____

Common ____

Habitat. ____ *Locality* ____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–258 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

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(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. _____ *Date* _____

ROOT. *Kind* _____ *shape* _____

STEM. *Class* _____ *kind* _____ *shape* _____

surface _____ *character* _____ *direction* _____

Duration _____ *branches* _____ *height* _____

Underground Stem _____

LEAF. *Arrangement* _____ *venation* _____ *forms* _____

_____ *base* _____ *apex* _____ *margins* _____

_____ *surfaces* _____ *vernation* _____ *texture* _____

_____ *color* _____ *duration* _____ *compounded* _____

_____ *petiole* _____ *stipules* _____

Radical Leaves _____

Inflorescence. *Class* _____ *mode* _____ *regularity* _____

_____ *symmetry* _____ *No. parts* _____ *perfectness* _____

_____ *completeness* _____ *bracts* _____

peduncle _____ *receptacle* _____

Calyx. *Color* _____ *shape* _____ *cohesion* _____ *relations* _____

_____ *insertion* _____ *No. sepals* _____ *shape of* _____

_____ *aestivation* _____ *duration* _____

Corolla. *Color* _____ *shape* _____ *cohesion* _____

insertion _____ *No. petals* _____ *shape of* _____

aestivation _____ *duration* _____

Stamens. *No.* _____ *cohesion* _____ *insertion* _____

length _____ *position* _____

Anthers. *Attachment* _____ *shape* _____ *aspect* _____

dehiscence _____ *No. cells* _____ *pollen* _____

Pistils. *No.* _____ *length* _____ *cohesion* _____

style _____ *stigma* _____

Fertilization. _____

_____

Ovary. *Insertion* _____ *shape* _____ *No. cells* _____

placentation _____ *ovules* _____

Fruit. *Kind* _____ *dehiscence* _____ *ripens* _____

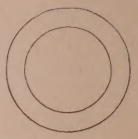
Seeds. *No.* _____ *shape* _____ *surface* _____ *embryo* _____

REMARKS. _____

_____

LEAF.

PLAN OF FLOWER.[1]



SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

_____

NAME. { *Botanical* _____

Common _____

Habitat. _____ *Locality* _____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. ____ *Date* ____ ____

ROOT. *Kind* ____ *shape* ____ ____

STEM. *Class* ____ *kind* ____ *shape* ____ ____

surface ____ *character* ____ *direction* ____ ____

Duration ____ *branches* ____ *height* ____ ____

Underground Stem ____ ____

LEAF. *Arrangement* ____ *venation* ____ *forms*

____ *base* ____ *apex* ____ *margins*

____ *surfaces* ____ *vernation* ____ *texture*

____ *color* ____ *duration* ____ *compounded*

____ *petiole* ____ *stipules* ____

Radical Leaves ____

Inflorescence. *Class* ____ *mode* ____ *regularity*

____ *symmetry* ____ *No. parts* ____ *perfectness*

____ *completeness* ____ *bracts* ____

peduncle ____ *receptacle* ____

Calyx. *Color* ____ *shape* ____ *cohesion* ____ *relations*

____ *insertion* ____ *No. sepals* ____ *shape of*

____ *aestivation* ____ *duration* ____

Corolla. *Color* ____ *shape* ____ *cohesion* ____

insertion ____ *No. petals* ____ *shape of* ____

aestivation ____ *duration* ____

Stamens. *No.* ____ *cohesion* ____ *insertion* ____

length ____ *position* ____

Anthers. *Attachment* ____ *shape* ____ *aspect* ____

dehiscence ____ *No. cells* ____ *pollen* ____

Pistils. *No.* ____ *length* ____ *cohesion* ____

style ____ *stigma* ____

Fertilization. ____

____

Ovary. *Insertion* ____ *shape* ____ *No. cells* ____

placentation ____ *ovules* ____

Fruit. *Kind* ____ *dehiscence* ____ *ripens* ____

Seeds. *No.* ____ *shape* ____ *surface* ____ *embryo* ____

REMARKS. ____

____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

____

NAME. { *Botanical* ____ / *Common* ____

Habitat. ____ *Locality* ____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
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(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. _____ *Date* _____

ROOT. *Kind* _____ *shape* _____

STEM. *Class* _____ *kind* _____ *shape* _____

surface _____ *character* _____ *direction* _____

Duration _____ *branches* _____ *height* _____

Underground Stem _____

LEAF. *Arrangement* _____ *venation* _____ *forms*

_____ *base* _____ *apex* _____ *margins*

_____ *surfaces* _____ *vernation* _____ *texture*

_____ *color* _____ *duration* _____ *compounded*

_____ *petiole* _____ *stipules* _____

Radical Leaves _____

Inflorescence. *Class* _____ *mode* _____ *regularity*

_____ *symmetry* _____ *No. parts* _____ *perfectness*

_____ *completeness* _____ *bracts* _____

peduncle _____ *receptacle* _____

Calyx. *Color* _____ *shape* _____ *cohesion* _____ *relations*

_____ *insertion* _____ *No. sepals* _____ *shape of*

_____ *aestivation* _____ *duration* _____

Corolla. *Color* _____ *shape* _____ *cohesion* _____

insertion _____ *No. petals* _____ *shape of* _____

aestivation _____ *duration* _____

Stamens. *No.* _____ *cohesion* _____ *insertion* _____

length _____ *position* _____

Anthers. *Attachment* _____ *shape* _____ *aspect* _____

dehiscence _____ *No. cells* _____ *pollen* _____

Pistils. *No.* _____ *length* _____ *cohesion* _____

style _____ *stigma* _____

Fertilization. _____

_____

Ovary. *Insertion* _____ *shape* _____ *No. cells* _____

placentation _____ *ovules* _____

Fruit. *Kind* _____ *dehiscence* _____ *ripens* _____

Seeds. *No.* _____ *shape* _____ *surface* _____ *embryo* _____

REMARKS. _____

_____

_____

ORDER. GENUS. SPECIES.

_____

NAME. { *Botanical* _____

Common _____

Habitat. _____ *Locality* _____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

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(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

*No.*_____ *Date*_____

ROOT. *Kind*_____ *shape*_____

STEM. *Class*_____ *kind*_____ *shape*_____

*surface*_____ *character*_____ *direction*_____

*Duration*_____ *branches*_____ *height*_____

*Underground Stem*_____

LEAF. *Arrangement*_____ *venation*_____ *forms*_____

*base*_____ *apex*_____ *margins*_____

*surfaces*_____ *vernation*_____ *texture*_____

*color*_____ *duration*_____ *compounded*_____

*petiole*_____ *stipules*_____

*Radical Leaves*_____

Inflorescence. *Class*_____ *mode*_____ *regularity*_____

*symmetry*_____ *No. parts*_____ *perfectness*_____

*completeness*_____ *bracts*_____

*peduncle*_____ *receptacle*_____

Calyx. *Color*_____ *shape*_____ *cohesion*_____ *relations*_____

*insertion*_____ *No. sepals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Corolla. *Color*_____ *shape*_____ *cohesion*_____

*insertion*_____ *No. petals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Stamens. *No.*_____ *cohesion*_____ *insertion*_____

*length*_____ *position*_____

Anthers. *Attachment*_____ *shape*_____ *aspect*_____

*dehiscence*_____ *No. cells*_____ *pollen*_____

Pistils. *No.*_____ *length*_____ *cohesion*_____

*style*_____ *stigma*_____

Fertilization._____

_____

Ovary. *Insertion*_____ *shape*_____ *No. cells*_____

*placentation*_____ *ovules*_____

Fruit. *Kind*_____ *dehiscence*_____ *ripens*_____

Seeds. *No.*_____ *shape*_____ *surface*_____ *embryo*_____

REMARKS._____

_____

ORDER. GENUS. SPECIES.

_____

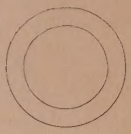
NAME. { *Botanical*_____

*Common*_____

*Habitat.*_____ *Locality*_____

LEAF.

PLAN OF FLOWER.[1]



SECTION OF FLOWER.[2]

STAMEN.

OVARY.

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

*No.*_____ *Date*_____

ROOT. *Kind*_____ *shape*_____

STEM. *Class*_____ *kind*_____ *shape*_____

*surface*_____ *character*_____ *direction*_____

*Duration*_____ *branches*_____ *height*_____

*Underground Stem*_____

LEAF. *Arrangement*_____ *venation*_____ *forms*_____

*base*_____ *apex*_____ *margins*_____

*surfaces*_____ *vernation*_____ *texture*_____

*color*_____ *duration*_____ *compounded*_____

*petiole*_____ *stipules*_____

*Radical Leaves*_____

Inflorescence. *Class*_____ *mode*_____ *regularity*_____

*symmetry*_____ *No. parts*_____ *perfectness*_____

*completeness*_____ *bracts*_____

*peduncle*_____ *receptacle*_____

Calyx. *Color*_____ *shape*_____ *cohesion*_____ *relations*_____

*insertion*_____ *No. sepals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Corolla. *Color*_____ *shape*_____ *cohesion*_____

*insertion*_____ *No. petals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Stamens. *No.*_____ *cohesion*_____ *insertion*_____

*length*_____ *position*_____

Anthers. *Attachment*_____ *shape*_____ *aspect*_____

*dehiscence*_____ *No. cells*_____ *pollen*_____

Pistils. *No.*_____ *length*_____ *cohesion*_____

*style*_____ *stigma*_____

Fertilization._____

Ovary. *Insertion*_____ *shape*_____ *No. cells*_____

*placentation*_____ *ovules*_____

Fruit. *Kind*_____ *dehiscence*_____ *ripens*_____

Seeds. *No.*_____ *shape*_____ *surface*_____ *embryo*_____

REMARKS._____

ORDER. GENUS. SPECIES.

NAME. *Botanical*_____

*Common*_____

*Habitat.*_____ *Locality*_____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
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(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

*No.*_____ *Date*_____

ROOT. *Kind*_____ *shape*_____

STEM. *Class*_____ *kind*_____ *shape*_____

*surface*_____ *character*_____ *direction*_____

*Duration*_____ *branches*_____ *height*_____

*Underground Stem*_____

LEAF. *Arrangement*_____ *venation*_____ *forms*_____

*base*_____ *apex*_____ *margins*_____

*surfaces*_____ *vernation*_____ *texture*_____

*color*_____ *duration*_____ *compounded*_____

*petiole*_____ *stipules*_____

*Radical Leaves*_____

Inflorescence. *Class*_____ *mode*_____ *regularity*_____

*symmetry*_____ *No. parts*_____ *perfectness*_____

*completeness*_____ *bracts*_____

*peduncle*_____ *receptacle*_____

Calyx. *Color*_____ *shape*_____ *cohesion*_____ *relations*_____

*insertion*_____ *No. sepals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Corolla. *Color*_____ *shape*_____ *cohesion*_____

*insertion*_____ *No. petals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Stamens. *No.*_____ *cohesion*_____ *insertion*_____

*length*_____ *position*_____

Anthers. *Attachment*_____ *shape*_____ *aspect*_____

*dehiscence*_____ *No. cells*_____ *pollen*_____

Pistils. *No.*_____ *length*_____ *cohesion*_____

*style*_____ *stigma*_____

Fertilization._____

Ovary. *Insertion*_____ *shape*_____ *No. cells*_____

*placentation*_____ *ovules*_____

Fruit. *Kind*_____ *dehiscence*_____ *ripens*_____

Seeds. *No.*_____ *shape*_____ *surface*_____ *embryo*_____

REMARKS._____

ORDER. GENUS. SPECIES.

NAME. { *Botanical*_____ *Common*_____

*Habitat*_____ *Locality*_____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
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*No.*_____ *Date*_____

ROOT. *Kind*_____ *shape*_____

STEM. *Class*_____ *kind*_____ *shape*_____

*surface*_____ *character*_____ *direction*_____

*Duration*_____ *branches*_____ *height*_____

*Underground Stem*_____

LEAF. *Arrangement*_____ *venation*_____ *forms*

base *apex* *margins*

surfaces *vernation* *texture*

color *duration* *compounded*

petiole *stipules*

Radical Leaves

Inflorescence. *Class* *mode* *regularity*

symmetry *No. parts* *perfectness*

completeness *bracts*

peduncle *receptacle*

Calyx. *Color* *shape* *cohesion* *relations*

insertion *No. sepals* *shape of*

aestivation *duration*

Corolla. *Color* *shape* *cohesion*

insertion *No. petals* *shape of*

aestivation *duration*

Stamens. *No.* *cohesion* *insertion*

length *position*

Anthers. *Attachment* *shape* *aspect*

dehiscence *No. cells* *pollen*

Pistils. *No.* *length* *cohesion*

style *stigma*

Fertilization.

Ovary. *Insertion* *shape* *No. cells*

placentation *ovules*

Fruit. *Kind* *dehiscence* *ripens*

Seeds. *No.* *shape* *surface* *embryo*

REMARKS.

ORDER. GENUS. SPECIES.

NAME. { *Botanical* / *Common* }

Habitat. *Locality*

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
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*No.*_____ *Date*_____

ROOT. *Kind*_____ *shape*_____

STEM. *Class*_____ *kind*_____ *shape*_____

*surface*_____ *character*_____ *direction*_____

*Duration*_____ *branches*_____ *height*_____

*Underground Stem*_____

LEAF. *Arrangement*_____ *venation*_____ *forms*_____

*base*_____ *apex*_____ *margins*_____

*surfaces*_____ *vernation*_____ *texture*_____

*color*_____ *duration*_____ *compounded*_____

*petiole*_____ *stipules*_____

*Radical Leaves*_____

Inflorescence. *Class*_____ *mode*_____ *regularity*_____

*symmetry*_____ *No. parts*_____ *perfectness*_____

*completeness*_____ *bracts*_____

*peduncle*_____ *receptacle*_____

Calyx. *Color*_____ *shape*_____ *cohesion*_____ *relations*_____

*insertion*_____ *No. sepals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Corolla. *Color*_____ *shape*_____ *cohesion*_____

*insertion*_____ *No. petals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Stamens. *No.*_____ *cohesion*_____ *insertion*_____

*length*_____ *position*_____

Anthers. *Attachment*_____ *shape*_____ *aspect*_____

*dehiscence*_____ *No. cells*_____ *pollen*_____

Pistils. *No.*_____ *length*_____ *cohesion*_____

*style*_____ *stigma*_____

Fertilization._____

_____

Ovary. *Insertion*_____ *shape*_____ *No. cells*_____

*placentation*_____ *ovules*_____

Fruit. *Kind*_____ *dehiscence*_____ *ripens*_____

Seeds. *No.*_____ *shape*_____ *surface*_____ *embryo*_____

REMARKS._____

_____

ORDER. GENUS. SPECIES.

_____

NAME. *Botanical*_____

*Common*_____

*Habitat.*_____ *Locality*_____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–258 and 272–275.
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(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. _____ *Date* _____

ROOT. *Kind* _____ *shape* _____

STEM. *Class* _____ *kind* _____ *shape* _____

surface _____ *character* _____ *direction* _____

Duration _____ *branches* _____ *height* _____

Underground Stem _____

LEAF. *Arrangement* _____ *venation* _____ *forms* _____

_____ *base* _____ *apex* _____ *margins* _____

_____ *surfaces* _____ *vernation* _____ *texture* _____

_____ *color* _____ *duration* _____ *compounded* _____

_____ *petiole* _____ *stipules* _____

Radical Leaves _____

Inflorescence. *Class* _____ *mode* _____ *regularity* _____

_____ *symmetry* _____ *No. parts* _____ *perfectness* _____

_____ *completeness* _____ *bracts* _____

peduncle _____ *receptacle* _____

Calyx. *Color* _____ *shape* _____ *cohesion* _____ *relations* _____

_____ *insertion* _____ *No. sepals* _____ *shape of* _____

_____ *aestivation* _____ *duration* _____

Corolla. *Color* _____ *shape* _____ *cohesion* _____

insertion _____ *No. petals* _____ *shape of* _____

aestivation _____ *duration* _____

Stamens. *No.* _____ *cohesion* _____ *insertion* _____

length _____ *position* _____

Anthers. *Attachment* _____ *shape* _____ *aspect* _____

dehiscence _____ *No. cells* _____ *pollen* _____

Pistils. *No.* _____ *length* _____ *cohesion* _____

style _____ *stigma* _____

Fertilization. _____

_____

Ovary. *Insertion* _____ *shape* _____ *No. cells* _____

placentation _____ *ovules* _____

Fruit. *Kind* _____ *dehiscence* _____ *ripens* _____

Seeds. *No.* _____ *shape* _____ *surface* _____ *embryo* _____

REMARKS. _____

_____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER.	GENUS.	SPECIES.

NAME. { *Botanical* _____

Common _____

Habitat. _____ *Locality* _____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
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(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

*No.*_____ *Date*_____

ROOT. *Kind*_____ *shape*_____

STEM. *Class*_____ *kind*_____ *shape*_____

*surface*_____ *character*_____ *direction*_____

*Duration*_____ *branches*_____ *height*_____

*Underground Stem*_____

LEAF. *Arrangement*_____ *venation*_____ *forms*_____

*base*_____ *apex*_____ *margins*_____

*surfaces*_____ *vernation*_____ *texture*_____

*color*_____ *duration*_____ *compounded*_____

*petiole*_____ *stipules*_____

*Radical Leaves*_____

Inflorescence. *Class*_____ *mode*_____ *regularity*_____

*symmetry*_____ *No. parts*_____ *perfectness*_____

*completeness*_____ *bracts*_____

*peduncle*_____ *receptacle*_____

Calyx. *Color*_____ *shape*_____ *cohesion*_____ *relations*_____

*insertion*_____ *No. sepals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Corolla. *Color*_____ *shape*_____ *cohesion*_____

*insertion*_____ *No. petals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Stamens. *No.*_____ *cohesion*_____ *insertion*_____

*length*_____ *position*_____

Anthers. *Attachment*_____ *shape*_____ *aspect*_____

*dehiscence*_____ *No. cells*_____ *pollen*_____

Pistils. *No.*_____ *length*_____ *cohesion*_____

*style*_____ *stigma*_____

Fertilization._____

Ovary. *Insertion*_____ *shape*_____ *No. cells*_____

*placentation*_____ *ovules*_____

Fruit. *Kind*_____ *dehiscence*_____ *ripens*_____

Seeds. *No.*_____ *shape*_____ *surface*_____ *embryo*_____

REMARKS._____

ORDER. GENUS. SPECIES.

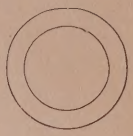
NAME. *Botanical*_____

*Common*_____

*Habitat.*_____ *Locality*_____

LEAF.

PLAN OF FLOWER.[1]



SECTION OF FLOWER.[2]

STAMEN.

OVARY.

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–258 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

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(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. _____ *Date* _____

ROOT. *Kind* _____ *shape* _____

STEM. *Class* _____ *kind* _____ *shape* _____

surface _____ *character* _____ *direction* _____

Duration _____ *branches* _____ *height* _____

Underground Stem _____

LEAF. *Arrangement* _____ *venation* _____ *forms* _____

_____ *base* _____ *apex* _____ *margins* _____

_____ *surfaces* _____ *vernation* _____ *texture* _____

_____ *color* _____ *duration* _____ *compounded* _____

_____ *petiole* _____ *stipules* _____

Radical Leaves _____

Inflorescence. *Class* _____ *mode* _____ *regularity* _____

_____ *symmetry* _____ *No. parts* _____ *perfectness* _____

_____ *completeness* _____ *bracts* _____

peduncle _____ *receptacle* _____

Calyx. *Color* _____ *shape* _____ *cohesion* _____ *relations* _____

_____ *insertion* _____ *No. sepals* _____ *shape of* _____

_____ *aestivation* _____ *duration* _____

Corolla. *Color* _____ *shape* _____ *cohesion* _____

insertion _____ *No. petals* _____ *shape of* _____

aestivation _____ *duration* _____

Stamens. *No.* _____ *cohesion* _____ *insertion* _____

length _____ *position* _____

Anthers. *Attachment* _____ *shape* _____ *aspect* _____

dehiscence _____ *No. cells* _____ *pollen* _____

Pistils. *No.* _____ *length* _____ *cohesion* _____

style _____ *stigma* _____

Fertilization. _____

_____

Ovary. *Insertion* _____ *shape* _____ *No. cells* _____

placentation _____ *ovules* _____

Fruit. *Kind* _____ *dehiscence* _____ *ripens* _____

Seeds. *No.* _____ *shape* _____ *surface* _____ *embryo* _____

REMARKS. _____

_____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

_____

NAME. { *Botanical* _____

Common _____

Habitat. _____ *Locality* _____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

*No.*_____ *Date*_____

ROOT. *Kind*_____ *shape*_____

STEM. *Class*_____ *kind*_____ *shape*_____

*surface*_____ *character*_____ *direction*_____

*Duration*_____ *branches*_____ *height*_____

*Underground Stem*_____

LEAF. *Arrangement*_____ *venation*_____ *forms*_____

*base*_____ *apex*_____ *margins*_____

*surfaces*_____ *vernation*_____ *texture*_____

*color*_____ *duration*_____ *compounded*_____

*petiole*_____ *stipules*_____

*Radical Leaves*_____

Inflorescence. *Class*_____ *mode*_____ *regularity*_____

*symmetry*_____ *No. parts*_____ *perfectness*_____

*completeness*_____ *bracts*_____

*peduncle*_____ *receptacle*_____

Calyx. *Color*_____ *shape*_____ *cohesion*_____ *relations*_____

*insertion*_____ *No. sepals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Corolla. *Color*_____ *shape*_____ *cohesion*_____

*insertion*_____ *No. petals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Stamens. *No.*_____ *cohesion*_____ *insertion*_____

*length*_____ *position*_____

Anthers. *Attachment*_____ *shape*_____ *aspect*_____

*dehiscence*_____ *No. cells*_____ *pollen*_____

Pistils. *No.*_____ *length*_____ *cohesion*_____

*style*_____ *stigma*_____

Fertilization._____

Ovary. *Insertion*_____ *shape*_____ *No. cells*_____

*placentation*_____ *ovules*_____

Fruit. *Kind*_____ *dehiscence*_____ *ripens*_____

Seeds. *No.*_____ *shape*_____ *surface*_____ *embryo*_____

REMARKS._____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

NAME. { *Botanical*_____ *Common*_____

*Habitat.*_____ *Locality*_____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256-253 and 272-275.
2. See Gray's Lessons, figs. 175, 212-214, also Wood's Class-book, figs. 305-308.

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(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

*No.*_____ *Date*_____

ROOT. *Kind*_____ *shape*_____

STEM. *Class*_____ *kind*_____ *shape*_____

*surface*_____ *character*_____ *direction*_____

*Duration*_____ *branches*_____ *height*_____

*Underground Stem*_____

LEAF. *Arrangement*_____ *venation*_____ *forms*_____

*base*_____ *apex*_____ *margins*_____

*surfaces*_____ *vernation*_____ *texture*_____

*color*_____ *duration*_____ *compounded*_____

*petiole*_____ *stipules*_____

*Radical Leaves*_____

Inflorescence. *Class*_____ *mode*_____ *regularity*_____

*symmetry*_____ *No. parts*_____ *perfectness*_____

*completeness*_____ *bracts*_____

*peduncle*_____ *receptacle*_____

Calyx. *Color*_____ *shape*_____ *cohesion*_____ *relations*_____

*insertion*_____ *No. sepals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Corolla. *Color*_____ *shape*_____ *cohesion*_____

*insertion*_____ *No. petals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Stamens. *No.*_____ *cohesion*_____ *insertion*_____

*length*_____ *position*_____

Anthers. *Attachment*_____ *shape*_____ *aspect*_____

*dehiscence*_____ *No. cells*_____ *pollen*_____

Pistils. *No.*_____ *length*_____ *cohesion*_____

*style*_____ *stigma*_____

Fertilization._____

Ovary. *Insertion*_____ *shape*_____ *No. cells*_____

*placentation*_____ *ovules*_____

Fruit. *Kind*_____ *dehiscence*_____ *ripens*_____

Seeds. *No.*_____ *shape*_____ *surface*_____ *embryo*_____

REMARKS._____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

NAME. *Botanical*_____

*Common*_____

*Habitat.*_____ *Locality*_____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

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(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

*No.*_____ *Date*_____

ROOT. *Kind*_____ *shape*_____

STEM. *Class*_____ *kind*_____ *shape*_____

*surface*_____ *character*_____ *direction*_____

*Duration*_____ *branches*_____ *height*_____

*Underground Stem*_____

LEAF. *Arrangement*_____ *venation*_____ *forms*_____

*base*_____ *apex*_____ *margins*_____

*surfaces*_____ *vernation*_____ *texture*_____

*color*_____ *duration*_____ *compounded*_____

*petiole*_____ *stipules*_____

*Radical Leaves*_____

Inflorescence. *Class*_____ *mode*_____ *regularity*_____

*symmetry*_____ *No. parts*_____ *perfectness*_____

*completeness*_____ *bracts*_____

*peduncle*_____ *receptacle*_____

Calyx. *Color*_____ *shape*_____ *cohesion*_____ *relations*_____

*insertion*_____ *No. sepals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Corolla. *Color*_____ *shape*_____ *cohesion*_____

*insertion*_____ *No. petals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Stamens. *No.*_____ *cohesion*_____ *insertion*_____

*length*_____ *position*_____

Anthers. *Attachment*_____ *shape*_____ *aspect*_____

*dehiscence*_____ *No. cells*_____ *pollen*_____

Pistils. *No.*_____ *length*_____ *cohesion*_____

*style*_____ *stigma*_____

Fertilization._____

Ovary. *Insertion*_____ *shape*_____ *No. cells*_____

*placentation*_____ *ovules*_____

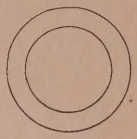
Fruit. *Kind*_____ *dehiscence*_____ *ripens*_____

Seeds. *No.*_____ *shape*_____ *surface*_____ *embryo*_____

REMARKS._____

LEAF.

PLAN OF FLOWER.[1]



SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

NAME. { *Botanical*_____ *Common*_____

*Habitat.*_____ *Locality*_____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

*No.*_____ *Date*_____

ROOT. *Kind*_____ *shape*_____

STEM. *Class*_____ *kind*_____ *shape*_____

*surface*_____ *character*_____ *direction*_____

*Duration*_____ *branches*_____ *height*_____

*Underground Stem*_____

LEAF. *Arrangement*_____ *venation*_____ *forms*

_____ *base*_____ *apex*_____ *margins*

_____ *surfaces*_____ *vernation*_____ *texture*

_____ *color*_____ *duration*_____ *compounded*

_____ *petiole*_____ *stipules*_____

*Radical Leaves*_____

Inflorescence. *Class*_____ *mode*_____ *regularity*

_____ *symmetry*_____ *No. parts*_____ *perfectness*

_____ *completeness*_____ *bracts*_____

*peduncle*_____ *receptacle*_____

Calyx. *Color*_____ *shape*_____ *cohesion*_____ *relations*

_____ *insertion*_____ *No. sepals*_____ *shape of*

_____ *aestivation*_____ *duration*_____

Corolla. *Color*_____ *shape*_____ *cohesion*_____

*insertion*_____ *No. petals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Stamens. *No.*_____ *cohesion*_____ *insertion*_____

*length*_____ *position*_____

Anthers. *Attachment*_____ *shape*_____ *aspect*_____

*dehiscence*_____ *No. cells*_____ *pollen*_____

Pistils. *No.*_____ *length*_____ *cohesion*_____

*style*_____ *stigma*_____

Fertilization._____

_____

Ovary. *Insertion*_____ *shape*_____ *No. cells*_____

*placentation*_____ *ovules*_____

Fruit. *Kind*_____ *dehiscence*_____ *ripens*_____

Seeds. *No.*_____ *shape*_____ *surface*_____ *embryo*_____

REMARKS._____

_____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

_____

NAME. { *Botanical*_____

*Common*_____

*Habitat.*_____ *Locality*_____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
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PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. ---------- *Date* ---------- ----------

ROOT. *Kind* ---------- *shape* ---------- ----------

STEM. *Class* ---------- *kind* ---------- *shape* ----------

surface ---------- *character* ---------- *direction* ----------

Duration ---------- *branches* ---------- *height* ----------

Underground Stem ----------

LEAF. *Arrangement* ---------- *venation* ---------- *forms*

---------- *base* ---------- *apex* ---------- *margins*

---------- *surfaces* ---------- *vernation* ---------- *texture*

---------- *color* ---------- *duration* ---------- *compounded*

---------- *petiole* ---------- *stipules* ----------

Radical Leaves ----------

Inflorescence. *Class* ---------- *mode* ---------- *regularity*

---------- *symmetry* ---------- *No. parts* ---------- *perfectness*

---------- *completeness* ---------- *bracts* ----------

peduncle ---------- *receptacle* ----------

Calyx. *Color* ---------- *shape* ---------- *cohesion* ---------- *relations*

---------- *insertion* ---------- *No. sepals* ---------- *shape of*

---------- *aestivation* ---------- *duration* ----------

Corolla. *Color* ---------- *shape* ---------- *cohesion* ----------

insertion ---------- *No. petals* ---------- *shape of* ----------

aestivation ---------- *duration* ----------

Stamens. *No.* ---------- *cohesion* ---------- *insertion* ----------

length ---------- *position* ----------

Anthers. *Attachment* ---------- *shape* ---------- *aspect* ----------

dehiscence ---------- *No. cells* ---------- *pollen* ----------

Pistils. *No.* ---------- *length* ---------- *cohesion* ----------

style ---------- *stigma* ----------

Fertilization. ----------

Ovary. *Insertion* ---------- *shape* ---------- *No. cells* ----------

placentation ---------- *ovules* ----------

Fruit. *Kind* ---------- *dehiscence* ---------- *ripens* ----------

Seeds. *No.* ---------- *shape* ---------- *surface* ---------- *embryo* ----------

REMARKS. ----------

ORDER. GENUS. SPECIES.

NAME. *Botanical* ----------

Common ----------

Habitat. ---------- *Locality* ----------

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
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PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. ---------- *Date* ----------

ROOT. *Kind* ---------- *shape* ----------

STEM. *Class* ---------- *kind* ---------- *shape* ----------

surface ---------- *character* ---------- *direction* ----------

Duration ---------- *branches* ---------- *height* ----------

Underground Stem ----------

LEAF. *Arrangement* ---------- *venation* ---------- *forms*

---------- *base* ---------- *apex* ---------- *margins*

---------- *surfaces* ---------- *vernation* ---------- *texture*

---------- *color* ---------- *duration* ---------- *compounded*

---------- *petiole* ---------- *stipules* ----------

Radical Leaves ----------

Inflorescence. *Class* ---------- *mode* ---------- *regularity*

---------- *symmetry* ---------- *No. parts* ---------- *perfectness*

---------- *completeness* ---------- *bracts* ----------

peduncle ---------- *receptacle* ----------

Calyx. *Color* ---------- *shape* ---------- *cohesion* ---------- *relations*

---------- *insertion* ---------- *No. sepals* ---------- *shape of*

---------- *aestivation* ---------- *duration* ----------

Corolla. *Color* ---------- *shape* ---------- *cohesion* ----------

insertion ---------- *No. petals* ---------- *shape of* ----------

aestivation ---------- *duration* ----------

Stamens. *No.* ---------- *cohesion* ---------- *insertion* ----------

length ---------- *position* ----------

Anthers. *Attachment* ---------- *shape* ---------- *aspect* ----------

dehiscence ---------- *No. cells* ---------- *pollen* ----------

Pistils. *No.* ---------- *length* ---------- *cohesion* ----------

style ---------- *stigma* ----------

Fertilization. ----------

Ovary. *Insertion* ---------- *shape* ---------- *No. cells* ----------

placentation ---------- *ovules* ----------

Fruit. *Kind* ---------- *dehiscence* ---------- *ripens* ----------

Seeds. *No.* ---------- *shape* ---------- *surface* ---------- *embryo* ----------

REMARKS. ----------

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

---------- ---------- ----------

NAME. { *Botanical* ---------- *Common* ----------

Habitat. ---------- *Locality* ----------

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(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. _____ *Date* _____

ROOT. *Kind* _____ *shape* _____

STEM. *Class* _____ *kind* _____ *shape* _____

surface _____ *character* _____ *direction* _____

Duration _____ *branches* _____ *height* _____

Underground Stem _____

LEAF. *Arrangement* _____ *venation* _____ *forms* _____

_____ *base* _____ *apex* _____ *margins* _____

_____ *surfaces* _____ *vernation* _____ *texture* _____

_____ *color* _____ *duration* _____ *compounded* _____

_____ *petiole* _____ *stipules* _____

Radical Leaves _____

Inflorescence. *Class* _____ *mode* _____ *regularity* _____

_____ *symmetry* _____ *No. parts* _____ *perfectness* _____

_____ *completeness* _____ *bracts* _____

peduncle _____ *receptacle* _____

Calyx. *Color* _____ *shape* _____ *cohesion* _____ *relations* _____

_____ *insertion* _____ *No. sepals* _____ *shape of* _____

_____ *aestivation* _____ *duration* _____

Corolla. *Color* _____ *shape* _____ *cohesion* _____

insertion _____ *No. petals* _____ *shape of* _____

aestivation _____ *duration* _____

Stamens. *No.* _____ *cohesion* _____ *insertion* _____

length _____ *position* _____

Anthers. *Attachment* _____ *shape* _____ *aspect* _____

dehiscence _____ *No. cells* _____ *pollen* _____

Pistils. *No.* _____ *length* _____ *cohesion* _____

style _____ *stigma* _____

Fertilization. _____

_____

Ovary. *Insertion* _____ *shape* _____ *No. cells* _____

placentation _____ *ovules* _____

Fruit. *Kind* _____ *dehiscence* _____ *ripens* _____

Seeds. *No.* _____ *shape* _____ *surface* _____ *embryo* _____

REMARKS. _____

_____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

_____

NAME. { *Botanical* _____

Common _____

Habitat. _____ *Locality* _____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
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(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

*No.*_____ *Date*_____

ROOT. *Kind*_____ *shape*_____

STEM. *Class*_____ *kind*_____ *shape*_____

*surface*_____ *character*_____ *direction*_____

*Duration*_____ *branches*_____ *height*_____

*Underground Stem*_____

LEAF. *Arrangement*_____ *venation*_____ *forms*_____

*base*_____ *apex*_____ *margins*_____

*surfaces*_____ *vernation*_____ *texture*_____

*color*_____ *duration*_____ *compounded*_____

*petiole*_____ *stipules*_____

*Radical Leaves*_____

Inflorescence. *Class*_____ *mode*_____ *regularity*_____

*symmetry*_____ *No. parts*_____ *perfectness*_____

*completeness*_____ *bracts*_____

*peduncle*_____ *receptacle*_____

Calyx. *Color*_____ *shape*_____ *cohesion*_____ *relations*_____

*insertion*_____ *No. sepals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Corolla. *Color*_____ *shape*_____ *cohesion*_____

*insertion*_____ *No. petals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Stamens. *No.*_____ *cohesion*_____ *insertion*_____

*length*_____ *position*_____

Anthers. *Attachment*_____ *shape*_____ *aspect*_____

*dehiscence*_____ *No. cells*_____ *pollen*_____

Pistils. *No.*_____ *length*_____ *cohesion*_____

*style*_____ *stigma*_____

Fertilization._____

Ovary. *Insertion*_____ *shape*_____ *No. cells*_____

*placentation*_____ *ovules*_____

Fruit. *Kind*_____ *dehiscence*_____ *ripens*_____

Seeds. *No.*_____ *shape*_____ *surface*_____ *embryo*_____

REMARKS._____

ORDER. GENUS. SPECIES.

NAME. *Botanical*_____

*Common*_____

*Habitat.*_____ *Locality*_____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–263 and 272–275.
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No. ____ *Date* ____

ROOT. *Kind* ____ *shape* ____

STEM. *Class* ____ *kind* ____ *shape* ____

surface ____ *character* ____ *direction* ____

Duration ____ *branches* ____ *height* ____

Underground Stem ____

LEAF. *Arrangement* ____ *venation* ____ *forms* ____

base ____ *apex* ____ *margins* ____

surfaces ____ *vernation* ____ *texture* ____

color ____ *duration* ____ *compounded* ____

petiole ____ *stipules* ____

Radical Leaves ____

Inflorescence. *Class* ____ *mode* ____ *regularity* ____

symmetry ____ *No. parts* ____ *perfectness* ____

completeness ____ *bracts* ____

peduncle ____ *receptacle* ____

Calyx. *Color* ____ *shape* ____ *cohesion* ____ *relations* ____

insertion ____ *No. sepals* ____ *shape of* ____

aestivation ____ *duration* ____

Corolla. *Color* ____ *shape* ____ *cohesion* ____

insertion ____ *No. petals* ____ *shape of* ____

aestivation ____ *duration* ____

Stamens. *No.* ____ *cohesion* ____ *insertion* ____

length ____ *position* ____

Anthers. *Attachment* ____ *shape* ____ *aspect* ____

dehiscence ____ *No. cells* ____ *pollen* ____

Pistils. *No.* ____ *length* ____ *cohesion* ____

style ____ *stigma* ____

Fertilization. ____

Ovary. *Insertion* ____ *shape* ____ *No. cells* ____

placentation ____ *ovules* ____

Fruit. *Kind* ____ *dehiscence* ____ *ripens* ____

Seeds. *No.* ____ *shape* ____ *surface* ____ *embryo* ____

REMARKS. ____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

NAME. { *Botanical* ____ *Common* ____

Habitat ____ *Locality* ____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

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(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

*No.*_____ *Date*_____

LEAF.

ROOT. *Kind*_____ *shape*_____

STEM. *Class*_____ *kind*_____ *shape*_____

*surface*_____ *character*_____ *direction*_____

*Duration*_____ *branches*_____ *height*_____

*Underground Stem*_____

PLAN OF FLOWER.[1]

LEAF. *Arrangement*_____ *venation*_____ *forms*

*base*_____ *apex*_____ *margins*

*surfaces*_____ *vernation*_____ *texture*

*color*_____ *duration*_____ *compounded*

*petiole*_____ *stipules*_____

*Radical Leaves*_____

Inflorescence. *Class*_____ *mode*_____ *regularity*

*symmetry*_____ *No. parts*_____ *perfectness*

*completeness*_____ *bracts*_____

SECTION OF FLOWER.[2]

*peduncle*_____ *receptacle*_____

Calyx. *Color*_____ *shape*_____ *cohesion*_____ *relations*

*insertion*_____ *No. sepals*_____ *shape of*

*aestivation*_____ *duration*_____

Corolla. *Color*_____ *shape*_____ *cohesion*_____

*insertion*_____ *No. petals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Stamens. *No.*_____ *cohesion*_____ *insertion*_____

*length*_____ *position*_____

STAMEN.

Anthers. *Attachment*_____ *shape*_____ *aspect*_____

*dehiscence*_____ *No. cells*_____ *pollen*_____

Pistils. *No.*_____ *length*_____ *cohesion*_____

*style*_____ *stigma*_____

Fertilization._____

Ovary. *Insertion*_____ *shape*_____ *No. cells*_____

*placentation*_____ *ovules*_____

OVARY.

Fruit. *Kind*_____ *dehiscence*_____ *ripens*_____

Seeds. *No.*_____ *shape*_____ *surface*_____ *embryo*_____

REMARKS._____

ORDER. GENUS. SPECIES.

NAME. { *Botanical*_____ *Common*_____

*Habitat.*_____ *Locality*_____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

*No.*_____ *Date*_____

ROOT. *Kind*_____ *shape*_____

STEM. *Class*_____ *kind*_____ *shape*_____

*surface*_____ *character*_____ *direction*_____

*Duration*_____ *branches*_____ *height*_____

*Underground Stem*_____

LEAF. *Arrangement*_____ *venation*_____ *forms*_____

_____ *base*_____ *apex*_____ *margins*_____

_____ *surfaces*_____ *vernation*_____ *texture*_____

_____ *color*_____ *duration*_____ *compounded*_____

_____ *petiole*_____ *stipules*_____

*Radical Leaves*_____

Inflorescence. *Class*_____ *mode*_____ *regularity*_____

_____ *symmetry*_____ *No. parts*_____ *perfectness*_____

_____ *completeness*_____ *bracts*_____

*peduncle*_____ *receptacle*_____

Calyx. *Color*_____ *shape*_____ *cohesion*_____ *relations*_____

_____ *insertion*_____ *No. sepals*_____ *shape of*_____

_____ *aestivation*_____ *duration*_____

Corolla. *Color*_____ *shape*_____ *cohesion*_____

*insertion*_____ *No. petals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Stamens. *No.*_____ *cohesion*_____ *insertion*_____

*length*_____ *position*_____

Anthers. *Attachment*_____ *shape*_____ *aspect*_____

*dehiscence*_____ *No. cells*_____ *pollen*_____

Pistils. *No.*_____ *length*_____ *cohesion*_____

*style*_____ *stigma*_____

Fertilization._____

_____

Ovary. *Insertion*_____ *shape*_____ *No. cells*_____

*placentation*_____ *ovules*_____

Fruit. *Kind*_____ *dehiscence*_____ *ripens*_____

Seeds. *No.*_____ *shape*_____ *surface*_____ *embryo*_____

REMARKS._____

_____

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

_____

NAME. *Botanical*_____

*Common*_____

*Habitat.*_____ *Locality*_____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256-253 and 272-275.
2. See Gray's Lessons, figs. 175, 212-214, also Wood's Class-book, figs. 305-308.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. _____ *Date* _____

ROOT. *Kind* _____ *shape* _____

STEM. *Class* _____ *kind* _____ *shape* _____

surface _____ *character* _____ *direction* _____

Duration _____ *branches* _____ *height* _____

Underground Stem _____

LEAF. *Arrangement* _____ *venation* _____ *forms* _____

base _____ *apex* _____ *margins* _____

surfaces _____ *vernation* _____ *texture* _____

color _____ *duration* _____ *compounded* _____

petiole _____ *stipules* _____

Radical Leaves _____

Inflorescence. *Class* _____ *mode* _____ *regularity* _____

symmetry _____ *No. parts* _____ *perfectness* _____

completeness _____ *bracts* _____

peduncle _____ *receptacle* _____

Calyx. *Color* _____ *shape* _____ *cohesion* _____ *relations* _____

insertion _____ *No. sepals* _____ *shape of* _____

aestivation _____ *duration* _____

Corolla. *Color* _____ *shape* _____ *cohesion* _____

insertion _____ *No. petals* _____ *shape of* _____

aestivation _____ *duration* _____

Stamens. *No.* _____ *cohesion* _____ *insertion* _____

length _____ *position* _____

Anthers. *Attachment* _____ *shape* _____ *aspect* _____

dehiscence _____ *No. cells* _____ *pollen* _____

Pistils. *No.* _____ *length* _____ *cohesion* _____

style _____ *stigma* _____

Fertilization. _____

_____

Ovary. *Insertion* _____ *shape* _____ *No. cells* _____

placentation _____ *ovules* _____

Fruit. *Kind* _____ *dehiscence* _____ *ripens* _____

Seeds. *No.* _____ *shape* _____ *surface* _____ *embryo* _____

REMARKS. _____

_____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

_____

NAME. { *Botanical* _____

Common _____

Habitat. _____ *Locality* _____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

*No.*_____ *Date*_____

ROOT. *Kind*_____ *shape*_____

STEM. *Class*_____ *kind*_____ *shape*_____

*surface*_____ *character*_____ *direction*_____

*Duration*_____ *branches*_____ *height*_____

*Underground Stem*_____

LEAF. *Arrangement*_____ *venation*_____ *forms*

_____ *base*_____ *apex*_____ *margins*

_____ *surfaces*_____ *vernation*_____ *texture*

_____ *color*_____ *duration*_____ *compounded*

_____ *petiole*_____ *stipules*_____

*Radical Leaves*_____

Inflorescence. *Class*_____ *mode*_____ *regularity*

_____ *symmetry*_____ *No. parts*_____ *perfectness*

_____ *completeness*_____ *bracts*_____

*peduncle*_____ *receptacle*_____

Calyx. *Color*_____ *shape*_____ *cohesion*_____ *relations*

_____ *insertion*_____ *No. sepals*_____ *shape of*

_____ *aestivation*_____ *duration*_____

Corolla. *Color*_____ *shape*_____ *cohesion*_____

*insertion*_____ *No. petals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Stamens. *No.*_____ *cohesion*_____ *insertion*_____

*length*_____ *position*_____

Anthers. *Attachment*_____ *shape*_____ *aspect*_____

*dehiscence*_____ *No. cells*_____ *pollen*_____

Pistils. *No.*_____ *length*_____ *cohesion*_____

*style*_____ *stigma*_____

Fertilization._____

_____

Ovary. *Insertion*_____ *shape*_____ *No. cells*_____

*placentation*_____ *ovules*_____

Fruit. *Kind*_____ *dehiscence*_____ *ripens*_____

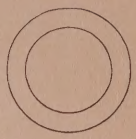
Seeds. *No.*_____ *shape*_____ *surface*_____ *embryo*_____

REMARKS._____

_____

LEAF.

PLAN OF FLOWER.[1]



SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER.	GENUS.	SPECIES.

NAME. { *Botanical*_____

*Common*_____

*Habitat.*_____ *Locality*_____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

*No.*_____ *Date*_____

ROOT. *Kind*_____ *shape*_____

STEM. *Class*_____ *kind*_____ *shape*_____

*surface*_____ *character*_____ *direction*_____

*Duration*_____ *branches*_____ *height*_____

*Underground Stem*_____

LEAF. *Arrangement*_____ *venation*_____ *forms*_____

_____ *base*_____ *apex*_____ *margins*_____

_____ *surfaces*_____ *vernation*_____ *texture*_____

_____ *color*_____ *duration*_____ *compounded*_____

_____ *petiole*_____ *stipules*_____

*Radical Leaves*_____

Inflorescence. *Class*_____ *mode*_____ *regularity*_____

_____ *symmetry*_____ *No. parts*_____ *perfectness*_____

_____ *completeness*_____ *bracts*_____

*peduncle*_____ *receptacle*_____

Calyx. *Color*_____ *shape*_____ *cohesion*_____ *relations*_____

_____ *insertion*_____ *No. sepals*_____ *shape of*_____

_____ *aestivation*_____ *duration*_____

Corolla. *Color*_____ *shape*_____ *cohesion*_____

*insertion*_____ *No. petals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Stamens. *No.*_____ *cohesion*_____ *insertion*_____

*length*_____ *position*_____

Anthers. *Attachment*_____ *shape*_____ *aspect*_____

*dehiscence*_____ *No. cells*_____ *pollen*_____

Pistils. *No.*_____ *length*_____ *cohesion*_____

*style*_____ *stigma*_____

Fertilization._____

_____

Ovary. *Insertion*_____ *shape*_____ *No. cells*_____

*placentation*_____ *ovules*_____

Fruit. *Kind*_____ *dehiscence*_____ *ripens*_____

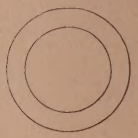
Seeds. *No.*_____ *shape*_____ *surface*_____ *embryo*_____

REMARKS._____

_____

LEAF.

PLAN OF FLOWER.[1]



SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

_____

NAME. { *Botanical*_____

{ *Common*_____

*Habitat.*_____ *Locality*_____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. _____ *Date* _____

ROOT. *Kind* _____ *shape* _____

STEM. *Class* _____ *kind* _____ *shape* _____

surface _____ *character* _____ *direction* _____

Duration _____ *branches* _____ *height* _____

Underground Stem _____

LEAF. *Arrangement* _____ *venation* _____ *forms* _____

_____ *base* _____ *apex* _____ *margins* _____

_____ *surfaces* _____ *vernation* _____ *texture* _____

_____ *color* _____ *duration* _____ *compounded* _____

_____ *petiole* _____ *stipules* _____

Radical Leaves _____

Inflorescence. *Class* _____ *mode* _____ *regularity* _____

_____ *symmetry* _____ *No. parts* _____ *perfectness* _____

_____ *completeness* _____ *bracts* _____

peduncle _____ *receptacle* _____

Calyx. *Color* _____ *shape* _____ *cohesion* _____ *relations* _____

_____ *insertion* _____ *No. sepals* _____ *shape of* _____

_____ *aestivation* _____ *duration* _____

Corolla. *Color* _____ *shape* _____ *cohesion* _____

insertion _____ *No. petals* _____ *shape of* _____

aestivation _____ *duration* _____

Stamens. *No.* _____ *cohesion* _____ *insertion* _____

length _____ *position* _____

Anthers. *Attachment* _____ *shape* _____ *aspect* _____

dehiscence _____ *No. cells* _____ *pollen* _____

Pistils. *No.* _____ *length* _____ *cohesion* _____

style _____ *stigma* _____

Fertilization. _____

_____

Ovary. *Insertion* _____ *shape* _____ *No. cells* _____

placentation _____ *ovules* _____

Fruit. *Kind* _____ *dehiscence* _____ *ripens* _____

Seeds. *No.* _____ *shape* _____ *surface* _____ *embryo* _____

REMARKS. _____

_____

ORDER. GENUS. SPECIES.

_____

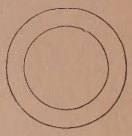
NAME. { *Botanical* _____

{ *Common* _____

Habitat. _____ *Locality* _____

LEAF.

PLAN OF FLOWER.[1]



SECTION OF FLOWER.[2]

STAMEN.

OVARY.

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256-253 and 272-275.
2. See Gray's Lessons, figs. 175, 212-214, also Wood's Class-book, figs. 305-308.

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(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. _____ *Date* _____

ROOT. *Kind* _____ *shape* _____

STEM. *Class* _____ *kind* _____ *shape* _____

surface _____ *character* _____ *direction* _____

Duration _____ *branches* _____ *height* _____

Underground Stem _____

LEAF. *Arrangement* _____ *venation* _____ *forms* _____

_____ *base* _____ *apex* _____ *margins* _____

_____ *surfaces* _____ *vernation* _____ *texture* _____

_____ *color* _____ *duration* _____ *compounded* _____

_____ *petiole* _____ *stipules* _____

Radical Leaves _____

Inflorescence. *Class* _____ *mode* _____ *regularity* _____

_____ *symmetry* _____ *No. parts* _____ *perfectness* _____

_____ *completeness* _____ *bracts* _____

peduncle _____ *receptacle* _____

Calyx. *Color* _____ *shape* _____ *cohesion* _____ *relations* _____

_____ *insertion* _____ *No. sepals* _____ *shape of* _____

_____ *aestivation* _____ *duration* _____

Corolla. *Color* _____ *shape* _____ *cohesion* _____

insertion _____ *No. petals* _____ *shape of* _____

aestivation _____ *duration* _____

Stamens. *No.* _____ *cohesion* _____ *insertion* _____

length _____ *position* _____

Anthers. *Attachment* _____ *shape* _____ *aspect* _____

dehiscence _____ *No. cells* _____ *pollen* _____

Pistils. *No.* _____ *length* _____ *cohesion* _____

style _____ *stigma* _____

Fertilization. _____

_____

Ovary. *Insertion* _____ *shape* _____ *No. cells* _____

placentation _____ *ovules* _____

Fruit. *Kind* _____ *dehiscence* _____ *ripens* _____

Seeds. *No.* _____ *shape* _____ *surface* _____ *embryo* _____

REMARKS. _____

_____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

_____

NAME. { *Botanical* _____

Common _____

Habitat. _____ *Locality* _____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

*No.*_____ *Date*_____

ROOT. *Kind*_____ *shape*_____

STEM. *Class*_____ *kind*_____ *shape*_____

*surface*_____ *character*_____ *direction*_____

*Duration*_____ *branches*_____ *height*_____

*Underground Stem*_____

LEAF. *Arrangement*_____ *venation*_____ *forms*

_____ *base*_____ *apex*_____ *margins*

_____ *surfaces*_____ *vernation*_____ *texture*

_____ *color*_____ *duration*_____ *compounded*

_____ *petiole*_____ *stipules*_____

*Radical Leaves*_____

Inflorescence. *Class*_____ *mode*_____ *regularity*

_____ *symmetry*_____ *No. parts*_____ *perfectness*

_____ *completeness*_____ *bracts*_____

*peduncle*_____ *receptacle*_____

Calyx. *Color*_____ *shape*_____ *cohesion*_____ *relations*

_____ *insertion*_____ *No. sepals*_____ *shape of*

_____ *aestivation*_____ *duration*_____

Corolla. *Color*_____ *shape*_____ *cohesion*_____

*insertion*_____ *No. petals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Stamens. *No.*_____ *cohesion*_____ *insertion*_____

*length*_____ *position*_____

Anthers. *Attachment*_____ *shape*_____ *aspect*_____

*dehiscence*_____ *No. cells*_____ *pollen*_____

Pistils. *No.*_____ *length*_____ *cohesion*_____

*style*_____ *stigma*_____

Fertilization._____

_____

Ovary. *Insertion*_____ *shape*_____ *No. cells*_____

*placentation*_____ *ovules*_____

Fruit. *Kind*_____ *dehiscence*_____ *ripens*_____

Seeds. *No.*_____ *shape*_____ *surface*_____ *embryo*_____

REMARKS._____

_____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

_____

NAME. { *Botanical* _____

Common _____

*Habitat.*_____ *Locality*_____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–258 and 272–275.
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(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. _____ *Date* _____

ROOT. *Kind* _____ *shape* _____

STEM. *Class* _____ *kind* _____ *shape* _____

surface _____ *character* _____ *direction* _____

Duration _____ *branches* _____ *height* _____

Underground Stem _____

LEAF. *Arrangement* _____ *venation* _____ *forms* _____

_____ *base* _____ *apex* _____ *margins* _____

_____ *surfaces* _____ *vernation* _____ *texture* _____

_____ *color* _____ *duration* _____ *compounded* _____

_____ *petiole* _____ *stipules* _____

Radical Leaves _____

Inflorescence. *Class* _____ *mode* _____ *regularity* _____

_____ *symmetry* _____ *No. parts* _____ *perfectness* _____

_____ *completeness* _____ *bracts* _____

peduncle _____ *receptacle* _____

Calyx. *Color* _____ *shape* _____ *cohesion* _____ *relations* _____

_____ *insertion* _____ *No. sepals* _____ *shape of* _____

_____ *aestivation* _____ *duration* _____

Corolla. *Color* _____ *shape* _____ *cohesion* _____

insertion _____ *No. petals* _____ *shape of* _____

aestivation _____ *duration* _____

Stamens. *No.* _____ *cohesion* _____ *insertion* _____

length _____ *position* _____

Anthers. *Attachment* _____ *shape* _____ *aspect* _____

dehiscence _____ *No. cells* _____ *pollen* _____

Pistils. *No.* _____ *length* _____ *cohesion* _____

style _____ *stigma* _____

Fertilization. _____

_____

Ovary. *Insertion* _____ *shape* _____ *No. cells* _____

placentation _____ *ovules* _____

Fruit. *Kind* _____ *dehiscence* _____ *ripens* _____

Seeds. *No.* _____ *shape* _____ *surface* _____ *embryo* _____

REMARKS. _____

_____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

_____

NAME. { *Botanical* _____

Common _____

Habitat. _____ *Locality* _____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

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(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. ____ *Date* ____

ROOT. *Kind* ____ *shape* ____

STEM. *Class* ____ *kind* ____ *shape* ____

surface ____ *character* ____ *direction* ____

Duration ____ *branches* ____ *height* ____

Underground Stem ____

LEAF. *Arrangement* ____ *venation* ____ *forms* ____

base ____ *apex* ____ *margins* ____

surfaces ____ *vernation* ____ *texture* ____

color ____ *duration* ____ *compounded* ____

petiole ____ *stipules* ____

Radical Leaves ____

Inflorescence. *Class* ____ *mode* ____ *regularity* ____

symmetry ____ *No. parts* ____ *perfectness* ____

completeness ____ *bracts* ____

peduncle ____ *receptacle* ____

Calyx. *Color* ____ *shape* ____ *cohesion* ____ *relations* ____

insertion ____ *No. sepals* ____ *shape of* ____

aestivation ____ *duration* ____

Corolla. *Color* ____ *shape* ____ *cohesion* ____

insertion ____ *No. petals* ____ *shape of* ____

aestivation ____ *duration* ____

Stamens. *No.* ____ *cohesion* ____ *insertion* ____

length ____ *position* ____

Anthers. *Attachment* ____ *shape* ____ *aspect* ____

dehiscence ____ *No. cells* ____ *pollen* ____

Pistils. *No.* ____ *length* ____ *cohesion* ____

style ____ *stigma* ____

Fertilization. ____

Ovary. *Insertion* ____ *shape* ____ *No. cells* ____

placentation ____ *ovules* ____

Fruit. *Kind* ____ *dehiscence* ____ *ripens* ____

Seeds. *No.* ____ *shape* ____ *surface* ____ *embryo* ____

REMARKS. ____

ORDER. GENUS. SPECIES.

NAME. *Botanical* ____

Common ____

Habitat. ____ *Locality* ____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

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(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

No. _____ *Date* _____

ROOT. *Kind* _____ *shape* _____

STEM. *Class* _____ *kind* _____ *shape* _____

surface _____ *character* _____ *direction* _____

Duration _____ *branches* _____ *height* _____

Underground Stem _____

LEAF. *Arrangement* _____ *venation* _____ *forms* _____

_____ *base* _____ *apex* _____ *margins* _____

_____ *surfaces* _____ *vernation* _____ *texture* _____

_____ *color* _____ *duration* _____ *compounded* _____

_____ *petiole* _____ *stipules* _____

Radical Leaves _____

Inflorescence. *Class* _____ *mode* _____ *regularity* _____

_____ *symmetry* _____ *No. parts* _____ *perfectness* _____

_____ *completeness* _____ *bracts* _____

peduncle _____ *receptacle* _____

Calyx. *Color* _____ *shape* _____ *cohesion* _____ *relations* _____

_____ *insertion* _____ *No. sepals* _____ *shape of* _____

_____ *aestivation* _____ *duration* _____

Corolla. *Color* _____ *shape* _____ *cohesion* _____

insertion _____ *No. petals* _____ *shape of* _____

aestivation _____ *duration* _____

Stamens. *No.* _____ *cohesion* _____ *insertion* _____

length _____ *position* _____

Anthers. *Attachment* _____ *shape* _____ *aspect* _____

dehiscence _____ *No. cells* _____ *pollen* _____

Pistils. *No.* _____ *length* _____ *cohesion* _____

style _____ *stigma* _____

Fertilization. _____

_____

Ovary. *Insertion* _____ *shape* _____ *No. cells* _____

placentation _____ *ovules* _____

Fruit. *Kind* _____ *dehiscence* _____ *ripens* _____

Seeds. *No.* _____ *shape* _____ *surface* _____ *embryo* _____

REMARKS. _____

_____

ORDER. GENUS. SPECIES.

_____

NAME. { *Botanical* _____

Common _____

Habitat. _____ *Locality* _____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

*No.*_____ *Date*_____

ROOT. *Kind*_____ *shape*_____

STEM. *Class*_____ *kind*_____ *shape*_____

*surface*_____ *character*_____ *direction*_____

*Duration*_____ *branches*_____ *height*_____

*Underground Stem*_____

LEAF. *Arrangement*_____ *venation*_____ *forms*_____

*base*_____ *apex*_____ *margins*_____

*surfaces*_____ *vernation*_____ *texture*_____

*color*_____ *duration*_____ *compounded*_____

*petiole*_____ *stipules*_____

*Radical Leaves*_____

Inflorescence. *Class*_____ *mode*_____ *regularity*_____

*symmetry*_____ *No. parts*_____ *perfectness*_____

*completeness*_____ *bracts*_____

*peduncle*_____ *receptacle*_____

Calyx. *Color*_____ *shape*_____ *cohesion*_____ *relations*_____

*insertion*_____ *No. sepals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Corolla. *Color*_____ *shape*_____ *cohesion*_____

*insertion*_____ *No. petals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Stamens. *No.*_____ *cohesion*_____ *insertion*_____

*length*_____ *position*_____

Anthers. *Attachment*_____ *shape*_____ *aspect*_____

*dehiscence*_____ *No. cells*_____ *pollen*_____

Pistils. *No.*_____ *length*_____ *cohesion*_____

*style*_____ *stigma*_____

Fertilization._____

Ovary. *Insertion*_____ *shape*_____ *No. cells*_____

*placentation*_____ *ovules*_____

Fruit. *Kind*_____ *dehiscence*_____ *ripens*_____

Seeds. *No.*_____ *shape*_____ *surface*_____ *embryo*_____

REMARKS._____

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

ORDER. GENUS. SPECIES.

NAME. { *Botanical*_____ *Common*_____

*Habitat.*_____ *Locality*_____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 175, 212–214, also Wood's Class-book, figs. 305–308.

PRESERVE A SPECIMEN OF EVERY SPECIES ANALYZED. RECORD ONLY WHAT IS OBSERVED.

(MAKE MARGINAL DRAWINGS OF WHAT YOU CANNOT DESCRIBE.)

*No.*_____ *Date*_____

ROOT. *Kind*_____ *shape*_____

STEM. *Class*_____ *kind*_____ *shape*_____

*surface*_____ *character*_____ *direction*_____

*Duration*_____ *branches*_____ *height*_____

*Underground Stem*_____

LEAF. *Arrangement*_____ *venation*_____ *forms*_____

*base*_____ *apex*_____ *margins*_____

*surfaces*_____ *vernation*_____ *texture*_____

*color*_____ *duration*_____ *compounded*_____

*petiole*_____ *stipules*_____

*Radical Leaves*_____

Inflorescence. *Class*_____ *mode*_____ *regularity*_____

*symmetry*_____ *No. parts*_____ *perfectness*_____

*completeness*_____ *bracts*_____

*peduncle*_____ *receptacle*_____

Calyx. *Color*_____ *shape*_____ *cohesion*_____ *relations*_____

*insertion*_____ *No. sepals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Corolla. *Color*_____ *shape*_____ *cohesion*_____

*insertion*_____ *No. petals*_____ *shape of*_____

*aestivation*_____ *duration*_____

Stamens. *No.*_____ *cohesion*_____ *insertion*_____

*length*_____ *position*_____

Anthers. *Attachment*_____ *shape*_____ *aspect*_____

*dehiscence*_____ *No. cells*_____ *pollen*_____

Pistils. *No.*_____ *length*_____ *cohesion*_____

*style*_____ *stigma*_____

Fertilization._____

Ovary. *Insertion*_____ *shape*_____ *No. cells*_____

*placentation*_____ *ovules*_____

Fruit. *Kind*_____ *dehiscence*_____ *ripens*_____

Seeds. *No.*_____ *shape*_____ *surface*_____ *embryo*_____

REMARKS._____

ORDER. GENUS. SPECIES.

_____

NAME. { *Botanical*_____ / *Common*_____

*Habitat.*_____ *Locality*_____

1. See Gray's Lessons, figs. 190, 191, 223, 224, also Wood's Class-book figs. 256–253 and 272–275.
2. See Gray's Lessons, figs. 173, 212–214, also Wood's Class-book, figs. 305–308.

LEAF.

PLAN OF FLOWER.[1]

SECTION OF FLOWER.[2]

STAMEN.

OVARY.

INDEX.

No.	NAME.	No.	NAME.

INDEX

No.	NAME.	No.	NAME.

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